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THE VALUE OF AN ACCURATE KNOWLEDGE OF ARTERIAL BLOOD PRESSURE TO THE CLINICIAN.

By John Bradford Briggs, M.D., and Henry Wireman Cook, M.D.,
Resident House Officers, Johns Hopkins Hospital, Baltimore.

From the infancy of medicine the pulse has been recognized as one of the most important guides in the practice of the profession. The early fathers of the craft, Hippocrates, Aristotle and Galen, ignorant as they were of the mechanics of the circulation, were yet exceedingly acute pulse observers, and many of their deductions hold to this day. Harvey's epoch-making discoveries (1628) gave an additional impetus to the more rational study of the pulse, and since his day observations on the peripheral circulation have been made with increasing accuracy, as our knowledge of the fundamental processes underlying the phenomenon of the pulse wave in the arteries has become more definite. So keen has been the interest, and so constant the application of the best minds in the profession to this subject, that the plausible statement might have been made many years ago that further study of the pulse by means of touch alone could not be expected to reveal any new principles, except in so far as more correct views of the physiology and pathology of the central organs of the circulation might alter the interpretation of pulse phenomena already long recognized. Certainly, as long as the finger remained the only available instrument for pulse study, and in the absence of instruments of precision, our fathers had probably attained the highest possible pitch of accuracy in the observation and interpretation of the palpation characters of the pulse wave.

The detailed analysis of that wave was made possible by the introduction of the sphygmograph (Marey, 1863), which reproduced graphically its minutest features, and the pictures so obtained were of great value in giving more definite interpretations to the impressions received by the palpating finger. But the value of the sphygmogram is distinctly limited, especially as it

gives no more than a suggestion of what is perhaps the most important of all the palpable pulse characteristics, namely, tension, or force; or, in other words, of the hydraulic pressure within the artery at the point palpated.

In the estimation of this factor, and of its variations from time to time, the finger of the trained observer gives better data than the most skilfully taken sphygmogram. The recognition of this difficulty, and of the importance of obtaining a more accurate means of determining pulse tension, led to the invention of a number of instruments, sphygmomanometers, designed to measure the pressure of the blood within the peripheral arteries. The direct physiological method of measurement through cannulæ in direct connection with the vessels being out of the question, clinically, many ingenious methods of indirect determination have been devised in the last few years since Von Basch* described his first instrument in 1880. Potain, Gärtner, Hill and Barnard, Mosso and others, have described instruments, all more or less faulty in principle or construction, many of them too clumsy and expensive for general use outside of large hospitals, and some of them grossly inaccurate. It has been shown that it is impossible by any of these methods to measure the mean arterial blood pressure, the only feasible way of determining it being to obtain measurements, as nearly simultaneous as possible, of both systolic and diastolic, or maximum and minimum pressures, and taking as the mean pressure the average between the two extreme figures obtained. The Riva-Rocci sphygmomanometer, or some modification of it, represents the most available instrument for general use. Correct in its physical principles, it is simple in construction, and can be made in compact form. It consists essentially of an enclosed system of rubber tubing, at one end a flat cloth-covered rubber bag, or armpiece, which can be adjusted so as to encircle an extremity of the patient, and at the other a rubber pump and valvular reservoir, by means of which air can be forced into the tubing and armpiece, and the pressure within the whole system raised thereby to any required degree. Interposed betwen the pump and hollow armpiece is a simple upright mercury manometer, with scale, connected with the tubing by means of a glass T-piece, and which indicates by the height of its mercury column the exact degree of pressure existing within the tubing at any given moment. If the armpiece be adjusted, say about the middle of the upper arm, and the pressure within it be gradually raised by means of the rubber pump, while the observer's finger is kept on the radial artery, it will be found that as the pressure in the armpiece rises the pulse wave, after becoming at first somewhat more distinct, gradually grows weaker and weaker, until finally it can no longer be felt. We have then obliterated the lumen of the brachial artery at the place of application of the encircling armlet, and the external

*v. Basch, Zeitschr. fuer klin. Med., Bd. II, 1880, and ibid. 1887, No. 11 et seq.

pressure necessary to accomplish this, as expressed by the height in millimetres of the mercury column in the manometer at the moment of disappearance of the peripheral pulse wave, is equal, or nearly so, to the maximum blood pressure within the brachial artery. The element of error is a small one, and is practically negligible in comparative clinical observations, and in such work the readings of the Riva-Rocci apparatus can be accepted as true expressions of the arterial blood pressure. The pressure thus determined is systolic—the maximum degree of tension produced within the vessel by the ventricular systole, and the diastolic and mean pressures, important as the latter would be, are not determined by this method. The former may be estimated with this instrument by the method which Gumprecht describes, but for ordinary usage we have found the systolic pressures sufficient. Of course, the systolic and diastolic pressures may, and do, vary independently of one another to some extent; but any marked change from time to time in the maximum pressure will be a sure indication of a change in the mean pressure in the same direction. Imperfect as the data it affords may be from the physiologist's point of view, the Riva-Rocci instrument furnishes the clinician with information on arterial tension of inestimable value—of greater value, we may safely assert, than any other readily applicable single means of pulse study. It is the purpose of this article to call more general attention to the great and daily benefit which may be derived by the general practitioner in the diagnosis and treatment of disease, from the study of systolic blood pressures by this method.

The criticism has been made that the habitual use of such a blood pressure apparatus to express in figures the degree of tension of the pulse, will tend to deter the observer from acquiring skill and accuracy in the estimation of tension by touch alone—the finger being the only sphygmomanometer which we can be certain to have with us at all times. The force of this objection is somewhat impaired by the fact that the touch is exercised in every blood pressure determination made with the Riva-Rocci apparatus, and the observer requires facility in expressing his palpation judgments in absolute terms—saying of a pulse that its pressure feels about 130 mm., or that its tension is above that of 170 mm. of mercury, instead of using indefinite terms, like "good" or "high," in describing tension. The constant control of touch perceptions by actual measurements is one of the best ways of training the finger. Any one who prides himself on his accuracy of estimation of tension by touch alone should, for mere educational purposes, make palpation estimates on a series of pulses with different heights of wave, and then check his observations by actual blood pressure measurements in the same individuals. The discrepancy between the results obtained by the finger, and those of the instrument of precision with the personal equation eliminated, will be surprising to any one who notes it for the first time and will convince him that the use of an accur-

ate sphygmomanometer will rather tend to improve the keenness of his touch, than to dull by any fancied loss in practice the sensitiveness of his finger tips.

Thanks to the introduction of the Riva-Rocci instrument into use at the Johns Hopkins Hospital a year ago by Dr. Harvey Cushing, we have had the opportunity during the past year to make an extended series of blood-pressure measurements on surgical and medical cases in great number and variety, and have been convinced of the practical qualities of the Riva-Rocci instrument, and of the great value of the results obtained by its use. Certain modifications of the construction and connections of the mercury manometer having suggested themselves as advisable, an attempt was made to devise an instrument of the greatest possible compactness, and with the smallest number of parts to be broken or deranged. Eimer & Amend of New York have succeeded in making for us, and have placed on the market, an instrument which will be more fully described elsewhere and which seems to fulfill all the requirements in a satisfactory way. The ideal apparatus would have no mercury, but merely a small aneroid manometer; but such instruments have proven in practice to be very unreliable.

The close relation existing between the central nervous system and the general circulatory system, through the vaso-motor centre in the medulla, the pneumogastric nerves and the many peripheral vaso-motor nerve fibres are illustrated by the remarkable changes in rate, and especially in the tension of the pulse, in a variety of pathological conditions of the cranial contents. The most striking example of this is to be found in conditions of increased intracranial pressure, such as may be produced by the growth of tumors, depressed fractures of the skull, or, more strikingly, by hemorrhage from an intracranial vessel. Cushing* has demonstrated experimentally the necessary and causal relation between intracranial pressure and general arterial blood pressure. Whenever the pressure within the brain rises to or near the pressure within the arteries the vital centres in the medulla are threatened with anemia, whose necessary consequence is the death of the individual. The vaso-motor centre reacts to this approaching anemization by sending out vaso-constrictor impulses, thus raising the general blood pressure and ensuring the medulla for the time being the supply of oxygen and nutritive material necessary to its continued activity.

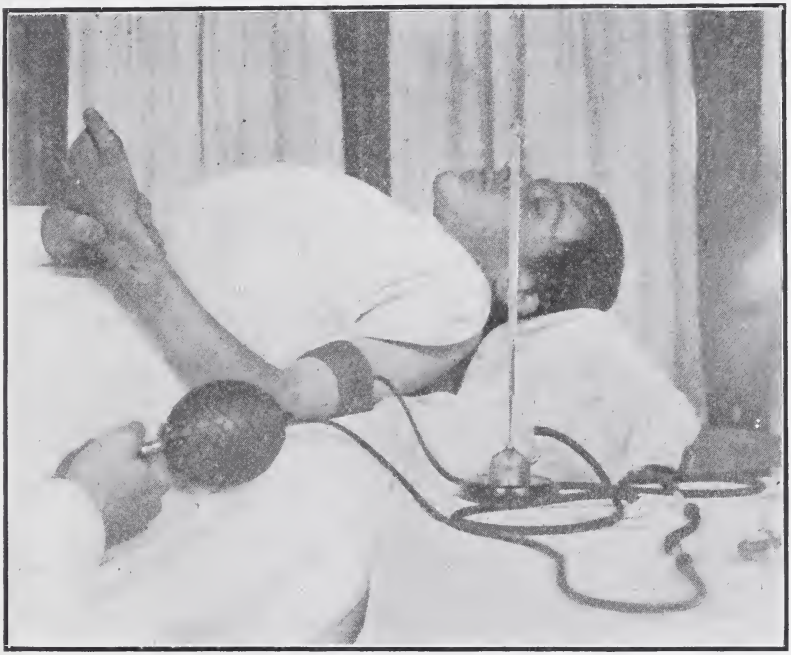
Intracranial hemorrhage establishes a remarkable "circulus vitosus" between the two pressures, for as the blood pressure rises to overcome the anemization of the centres, there is increased bleeding from the ruptured vessel, and consequently a further increase in intracranial pressure. This necessitates still greater increase in blood pressure, and the interaction of the two causes continues until the vessels are constricted to the greatest extent

*Nothnagel's Handbuch d. spec. Path. u. Ther., Bd. IX, Theil iii, Abtheil ii, Wien 1901.

possible, and the blood pressure has risen to the maximum. The medulla then becomes anemic, and simultaneous collapse of the circulation and respiration occurs, with death as a sequence. The importance of this physiological law is tremendous, if the medical attendant on a case of intracranial hemorrhage is able to measure accurately the blood pressure, and understands the significance of its great height, and its rapid and continued rise. If intracranial hemorrhage has been diagnosed by the general signs and symptoms, the existence of a high and rising blood pressure in the patient is positive evidence of increasing hemorrhage, and is in itself a sufficient indication for surgical intervention. Another application of these same physiological principles enables us to use blood pressure observations with much advantage in the diagnosis of obscure comatose conditions. The determination of the cause of sudden and persistent coma is often one of the most difficult problems that can confront the practitioner. The existence or absence of diabetes can be readily determined, but as the majority of the victims of apoplexy have granular kidneys, the finding of albumen and tube casts in the urine does not enable us to differentiate with any degree of certainty between uremia and cerebral hemorrhage in a comatose patient with reflexes absent and without localizing signs. It is notorious that in nephritis and the uremic state the pulse is of high tension, and this is also true in patients with hemorrhage into the skull. Beyond this, the palpating finger cannot go. In both conditions the pulse feels hard, but if the clinician uses palpation alone he cannot with any certainty pronounce on the degree of the difference in tension in two pulses, both of which are of exceedingly high tension. Where accurate measurements of tension, or blood pressure, can be made, we may justifiably indulge in a refinement of observation in that we can determine just how high the pressure really is. Repeated observations of the blood pressure in many hundreds of cases of nephritis and uremia made by many observers, and our personal experience in the measurement of pressures in such conditions, have shown us that there is a certain limit above which the blood pressure does not rise in nephritis, even when complicated by a high degree of sclerosis of the vessels. This limit may be set slightly above 300 mm., which figure is the highest recorded observation in nephritis (Janeway), and the vast majority of nephritic cases never have blood pressures above 250 mm. In intracranial hemorrhage, on the other hand, there is no such comparatively low limit to the blood pressure when the vaso-constrictors are battling with intracranial tension for the control of the vascular territory of the medulla. As the pressure rises within the rigid walls of the skull, the blood pressure is soon forced up to 300 mm., and readings of 350 mm. are not uncommon in these conditions. These very high readings in cases of coma of obscure causation, point with no uncertain indication to the brain

as the seat of trouble, and afford us a certain basis for accurate diagnosis in the absence of local signs or accurate history of the attack. In these Alpine territories of blood pressure readings the information derived by the fingers of the most skilfull pulse observer cannot but be faulty. Where the blood pressure is much above 200 mm. of mercury the sensory impressions received by palpation of the pulse are too intense to permit of accurate differentiation. No one could judge by touch alone of the difference of one-third in the degree of tension that exists between a pulse with a pressure of 200 millimetres and one of 300 millimetres, whereas the Riva-Rocci apparatus can determine with accuracy at these levels a variation of 5 millimetres.

It is perhaps the operating surgeon who will derive the greatest satisfaction from careful measurements of the blood pressure, made during the course of long operations, or whenever the patient's condition gives cause for anxiety. The relative valuelessness of pulse rate determinations, as compared with blood pressure figures, is nowhere better brought out than in patients on the operating table. In doubtful cases the surgeon's mind may be relieved of much hesitation, or he may receive early warning of the necessity for haste, or even complete abandonment of his intended manipulations, if he can command a knowledge of the state and variations of his patient's blood pressure during the operation. Observations of the blood pressure by means of the Riva-Rocci apparatus made at intervals of from two to five minutes during operations on patients already in bad condition, or in whom the necessary interference with nerves, vessels and important organs is likely to produce dangerous depression, give striking illustrations of the actual state of the patient's circulation at each stage of the operation. By means of such observations, best plotted on simple charts, following Cushing's suggestion, and, if desired, in connection with the pulse rate, one can follow the gradual impairment of vitality induced by hemorrhage, or the more rapid depression consequent upon excessive irritation of peripheral nerves, or prolonged handling of abdominal viscera. One can recognize by changes in the blood pressure level those manipulations whose effects are especially undesirable, and can thus obtain the most valuable guide to the avoidance of those effects. We can anticipate, if we know the condition of the blood pressure, often by many minutes the revelation of the change in our patient's condition through general signs and symptoms, and we are in possession of the best conceivable index to treatment, when once the condition of operative depression has been established. Cushing (*Annals of Surgery*, September, 1902), referring to his experience with this matter in his Johns Hopkins Hospital cases, says: "By means of information obtained by the Riva-Rocci apparatus in the operating room in the past six months, we have been able on several occasions in critical cases to anticipate and avoid profound states



Application of the Splygmomanometer.

of shock and collapse, and, indeed, in some instances I feel confident it has been instrumental in saving lives."

In the condition of shock, whether it has been produced by operative measures or by trauma of an accidental nature, the comparative study of the exact state of the pulse tension is of the utmost importance. The most characteristic phenomenon in shock, the one really essential factor in the production of its clinical picture, so far as we at present understand it, is the markedly and persistently lowered blood pressure. The questions of its causation and pathology are intricate, and the last word is far from having been said, but we can be certain that any measure that will raise and maintain the blood pressure at approximately normal levels will directly tend to relieve the shock. In our treatment, then, of this desperate and too often fatal condition, it is absolutely essential to follow carefully the changes in blood pressure produced by our mechanical and chemical therapeutic measures, and we may hope that when such studies have been consistently made on many cases of pure shock, the present confusion of ideas in regard to its proper treatment will disappear, and a rational, conservative and consistent therapy will be established.

One of the most constant and characteristic of the symptoms of nephritis is increased vascular tension exhibited in what is commonly known as the "hard pulse," or as illustrating its generally recognized association, the "renal pulse." This is shown in most cases from the onset of the disease, and may be one of the most valuable indications of its existence. "Persistent high tension is one of the earliest and most important symptoms of interstitial nephritis. * * * Of all the indications, that offered by the pulse is the most important. * * Persistent high tension, with thickening of the arterial wall, in a man under fifty, means that serious mischief has already taken place; that cardio-vascular changes are certainly, and renal most probably, present."—(Osler). Taking this well-known clinical fact into consideration, it will be readily seen how important it is as a question of diagnosis in a case where obscure renal changes are to be differentiated, that the diagnostician should be in a position to realize the pulse tension of his patient accurately, and free from the errors of personal equation, and to represent it in terms that can be recorded with some definiteness, and which are perfectly intelligible in print or conversation. Thus, to say, "This man averages a blood pressure of 190 millimetres of mercury," when we know that of the normal man to be 125 to 135 millimetres, gives one a clearer idea than if the tension were expressed in the vague and varying phases and similes with which each clinician attempts to express his palpation impressions.

Even more important than serving as an aid to diagnosis, blood pressure observations constitute the best means of following and regulating treatment directed at the most far-reaching

and destructive symptom of the disease, namely, the increased arterial tension. Osler places this first among the symptoms demanding treatment, but at the same time cautions against measures which may cause a serious danger in too great lowering of the blood tension, "which, under these circumstances, is liable to be associated with serious effusions."

Since "nephritis is usually attended from the first with an increase of arterial tension, and as a consequence with the cardiovascular changes which ensue upon it, hypertrophy of the heart and thickening of the arteries, and, in advanced cases, the retinal alterations which belong to the same process,"* treatment aiming at a correction of this pernicious condition is clearly indicated. When such treatment is regulated by accurate determinations of the variations in arterial tension produced by our therapeutic measures, so as to ensure their being effectual, and at the same time to guard against over-treatment, we are best able to preserve the "happy medium." For example, in having recourse to the lancet, as symptoms of uremia develop, a practice which, although overdone in the earlier days, now has firm foundation established on correct scientific grounds, as well as by empirical proof of long, practical usage, a quantitative regulation of the effect on arterial tension is possible by keeping accurate account of its variations in one brachial, while the flow of blood is taking place from a vein of the other arm. Thus we need not bleed a certain prescribed amount which cannot be calculated for the individual requirements of any one case, and which may be either too little for any beneficial effect, or so much as to cause circulatory embarrassment; but with a definite control of arterial tension we may let the blood flow slowly until there is, at least, perceptible lowering, and then stop it before the depletion has produced any serious drop in tension. Instead of bleeding, with the vague idea of lowering tension, and at the same time trusting we may not do serious damage, we are able by repeated blood pressure observations to bleed at will until the tension is lessened by 20, 30 or 40 millimetres of mercury. This control is valuable in the other conditions, where venesection is employed, such as broken cardiac compensation, eclampsia and pneumonia, as well as in nephritis, and the method is likewise applicable to the regulation of the sweat-bath treatment.

In the administration of drugs, such as the nitrites and nitroglycerine, and of other agents intended to lower arterial tension, such as rest in bed, dietary restrictions and drastic purging, occasional blood pressure estimates will serve as a guide to the amount and duration of such treatment, and help in avoiding

*Dickinson-Clifford-Albutt's System of Medicine, Vol. V., p. 367.

the attendant dangers. As Broadbent* says of chronic Bright's disease, "the danger being in some sort measurable by the degree of tension present in a given case, one of the main problems of treatment will be how to keep down the tension at a point which will not work mischief in the circulatory system, without doing injury or incurring danger in other ways."

It is well recognized that measures which raise arterial tension in cases of nephritis, such as exercise, increase the albumen percentage in the urine, and measures tending to lower arterial pressure are usually attended by amelioration of this symptom. The authors have found by observations in albuminuria that variations in blood pressure are frequently quite coincident with corresponding variations in the albumen content of the urine, as indicated above, and are inclined to believe that there exists some close interdependent or causal relation between variations in arterial tension and variations in albuminuria.

We believe that in nephritis the requirements for treatment will be greatly assisted by keeping a blood pressure chart of daily or semi-daily determinations, and with such a graphic guide, attempting to maintain the arterial tension equally at its best level.

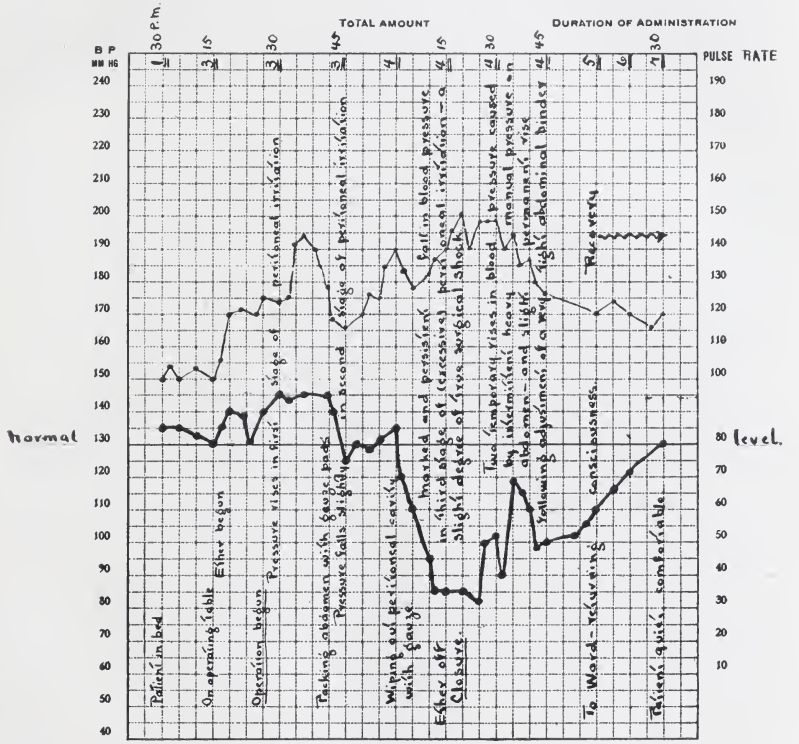
In cardiac diseases deviation in arterial tension from the normal is almost a universal feature, and their accurate estimation is most valuable in the detection of the existence of such disease, in the differentiation of its varied forms, and in the regulation of its treatment.

In cases presenting palpitation, irregularities of pulse, respiratory distress and other symptoms of cardiac failure, it is important and difficult, as Morison† points out, to decide whether these symptoms are "diagnostic of failure of the cardiac muscle or are a neurotic peculiarity of the patients." An accurate knowledge of pulse tension is here a valuable index of true cardiac strength. Musser says low tension is met with "whenever there is marked cardiac weakness," and its recognition as a symptom of myocarditis and acute dilatation, or as a complication of valvular disease, arterio-sclerosis and nephritis is much assisted by the use of an instrument for accurate blood pressure estimation.

Blood pressure observations are of special value where valvular disease obscures the true pulse force by introducing confusing factors into the palpation character of the pulse, making any estimation by this means extremely difficult. The control of therapeutic measures aiming at the restoration of normal tension in these cases by blood pressure determinations have been indicated above in the consideration of nephritis, and it is only necessary to add that such determinations in cases of broken compensation may be the best criterion of the relative indications for depleting or stimulating treatment.

In the differentiation of the pseudo form of angina pectoris

*The Pulse—Lea Bros., Philadelphia.
†Cardiac Failure, London, 1897. ‡Medical Diagnosis.


TOTAL AMOUNT
DURATION OF ADMINISTRATION
B P MM HG
PULSE RATE
normal
level.
Patient in bed.
On opening table Ether begun
Operation begun
Pressure rises in first stage of peritoneal irritation
Packing abdomen with gauze pads
Pressure falls slightly
in second stage of peritoneal irritation
Wiping out peritoneal cavity with gauze
Ether off.
Closure.
fall in blood pressure
marked and persistent
in third stage of excessive peritoneal irritation — a
slight degree of true surgical shock
Two temporary rises in blood pressure caused by intermittent heavy manual pressure on abdomen — and slight permanent rise following adjustment of a very tight abdominal binder
Recovery
To Ward — recovering consciousness.
Patient quite comfortable

Case of general purulent peritonitis — laparotomy, toilette of the peritoneum, and drainage, with partial closure.

Illustrating the primarily stimulant, but ultimately dangerously depressing effect on the general circulation of peritoneal trauma during operation, and showing the effect of abdominal compression (through emptying of the engorged splanchnic vessels) on the arterial blood pressure

Blood Pressure .——. Pulse Rate .———.

from the true, a knowledge of the actual blood pressure is of great assistance, so much so that Sansom asserts of such cases, "That if the tension is increased, even though the signs are not typical, the fear present or remote of true angina is justified."

One of the most important signs of thoracic aneurism is difference in the radial pulse, which is often strikingly shown by the sphygmomanometer, when palpation alone is uncertain. The value of keeping record of changes in arterial tension in cases of aneurism speaks for itself when the rationale of the best-known method of treatment, that of Tufuell, lies in efforts to reduce tension.

Numerous other conditions are associated with characteristic changes in pulse tension, such as lead poisoning, gout, diabetes, chronic alcoholism and arteriosclerosis, with high tension; debility, inanition, some psychoses and many toxic conditions with low tension, in the diagnosis and treatment of which it would seem that accurate estimates of arterial tension would prove of value. Ehgren* lately has reported a case where the diagnosis of a movable abdominal tumor was made by observation on the blood pressure and confirmed by autopsy.

Recent blood pressure observations which we have made on depressed conditions of the vaso-motor system in children and adults leads us to believe that where the degree of arterial tension calls for stimulation, an accurate knowledge of the variations of tension under treatment constitutes the best guide to the administration of stimulants. The results of this work will be published later.

In addition to these diseased states where the importance of a knowledge of pulse tension is well recognized, there is a condition which Broadbent classifies under the hereditary causes of high tension, and which is often spoken of as the gouty or arteriosclerosis diathesis. It includes a varied class of cases, a large proportion of young male adults, often of the better class, occasionally with no symptoms other than the high tension pulse, but frequently troubled more or less with headache, nervousness, dyspepsia, sleeplessness and constipation. They are often regarded with indifference, and either receive no treatment, or the ordinary tonics, which are little better than placebos. Musser recognizes such a class: "There is in some families a marked tendency to high tension. The younger members show its effects in headaches and bilious atacks, while the older ones develop chronic heart disease and apoplexy."

It seems probable that when a means of closer study of arterial tension comes into general use, this condition may receive more attention, and be met by more rationally directed treatment, with the view of overcoming this hereditary tendency to chronic nephritis, apoplexy and heart disease. That the outcome of this condition is not fanciful, but a very serious reality,

*Fortschritt der Medicin, Feb. 1, 1902.

is shown by Broadbent's experience, borne out by the numerous illustrations which are met with daily. He says: "It is not an uncommon thing for all the males of a family to die off about or before the age of sixty or sixty-five, from the consequences of arterial tension of one kind or another." The same means should throw more light upon the various acquired etiological factors which play their part more or less obscurely in the production of arterio-sclerosis—for example, alcohol, work lues, and the acute infectious diseases.

In following the blood pressure during pregnancy and labor, we have found that aside from the physiological interest, such observations have been of value in watching the effect of severe post-partum hemorrhage, and in its treatment, and in the diagnosis and treatment of eclampsia.

We have endeavored to review some of the conditions in which the degree of arterial tension plays an important rôle, and to emphasize that in any such case an accurate determination of blood pressure is of more value than an indefinite estimation by sense perception. We hope not to be misunderstood as making extravagant claims for a blood pressure instrument, nor as denying the value of the educated finger tips. To gain that delicacy of pulse palpation which only years of experience can develop must continue to be the goal of any aspirant for clinical honors. All must realize that the masterhand of the trained clinician derives information from the pulse that is beyond the reach of the tyro, and can never be obtained mechanically. No instrument can ever supplant the "tactus eruditus," but we believe that any judgment concerning arterial tension will be a better reflection of actual conditions, if tactile impressions are supplemented by the sphygmomanometer.

SOME OBSERVATIONS ON THE BACTERIA OF ICE CREAM.

By Henrietta M. Thomas,

Student at the Woman's Medical College of Baltimore.

READ BEFORE THE MEDICAL SOCIETY OF THAT COLLEGE, NOVEMBER 25, 1902.

In the early summer of this year Dr. Henry Lee Smith of Baltimore asked me to examine ice cream in the hope of finding bacillus typhosus. Dr. Smith had observed three or four cases of typhoid fever in which the infection could apparently have been transmitted only by ice cream. Furthermore, the fact that typhoid fever is most prevalent in the months of August and September, just the

time when the demand for ice cream is the greatest, rather indicates that it may be one of the channels through which that disease is conveyed. Dr. William R. Stokes offered to allow me to work in the bacteriological laboratory of the Department of Health and to supervise my work, and it is to his very kind assistance that I am much indebted for any results that I may have obtained.

That it is important that ice cream should be pure will be readily admitted when we remember how often its use is recommended to patients unable to take ordinary food and to those just recovering from typhoid fever, when the digestive organs are especially unfit to withstand infection. Not only is it of importance to the sick, but also to the healthy, that ice cream should contain no pathogenic organism, for during the hot summer weather it is often substituted for ordinary food, and taking it thus on an empty stomach is one of the surest ways of becoming infected by any impurities it may contain.

I will first say a word in regard to the amount of fat which ice cream contains. Dr. J. König[1] of Germany found in thirty-nine samples of fresh cream that the per cent. of fat ranged from 8.17 to 70.10, and of them all only three were below 12 per cent. In the samples of ice cream which I examined the per cent. of fat was never higher than 11.2, and in one instance it was as low as 1.25. Of course, we must remember that flavorings, sugar, eggs, etc., are added to the fresh cream, so that we cannot expect to find as great an amount of fat in ice cream as we do in ordinary cream. Still, when the per cent. is as low as 3, or even 4, we may feel reasonably sure that that so-called ice cream came more from the bottom than the top of the pail.

Turning now to the bacteria found in ice cream, we will first consider the number present in 1 c. c. This I found to vary from 378,000 to 36,600,000. In some very interesting investigations made by Drs. H. W. Conn and W. M. Esten[2] they found that in sweet cream collected for ripening the number of bacteria ranged from a figure too small to be ascertained in the dilution used to 36,000,000. From this it would seem that the number of bacteria in ice cream is practically the same as that in fresh cream. That this is the case is rather remarkable when we consider the unsterilized substances which have been added, and that the mixture has been put into unsterilized cans. It may, however, be partly accounted for by the fact, according to experiments made by Dr. Prudden,[3] that there are varieties of bacteria which are reduced by freezing.

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[1] Zusammensetzung der menschlichen Nahrungs- und Genussmittel.—Dr. F. Koenig.

[2] "The Ripening of Cream."—H. W. Conn and W. M. Esten. [From Stow's Agricultural Station Report, 1900.]

[3] *Living Age*, 1902.—Article on "Bacteria and Ice."—By G. C. Franklin.

With regard to the kinds of bacteria found in ice cream, let me state at the beginning that I did not find bacillus typhosus, but this does not at all mean that it cannot be found. My researches were only continued for a little over two months, during which time I procured specimens of ice cream or of hokey-pokey from about twenty-five different places in the city. In these samples I found many bacteria which I did not identify and some that I did. Of these last there was one which, in its morphology and in its growth on the various nutriment media, resembled the streptococcus lanceolatus or pneumococcus of Fraenkel—the cause of pneumonia. It was not, however, pathogenic to either guinea-pigs or rabbits when injected in quantities of 3 or 5 c. c. But the pneumococcus easily loses its virulence when subcultured, and the fact that it was not pathogenic in these animals does not prove that it might not have had a bad effect on delicate or susceptible persons. There has been some discussion as to whether or not milk does convey pneumonia. Nolen[4] and Poels have demonstrated an organism similar to Friedlander's bacillus pneumoniae in cases of pleuro-pneumonia in cattle, and on the strength of this Léçuyer felt justified in assuming that two fatal cases of pneumonia in children were due to a transmission through the milk. Wiedmann also reports an instance of two infants who perished from pneumonia, which he attributed to the infectious character of the milk, but the evidence is not yet sufficiently complete to say positively whether this disease can be thus conveyed. The finding of the pneumococcus rather indicates that it may be, though in my cases the bacteria were not pathogenic, and, of course, their presence may have been due not to the cream, but to the materials added.

I also found a streptococcus which was not pathogenic upon injection into a guinea-pig. The colon (bacillus coli communis) was omnipresent. In one instance when I injected hokey-pokey into the abdominal cavity of a guinea-pig the animal died within twenty-four hours. At the autopsy he was found to have had general peritonitis. The only organism that I could recover was the colon from the blood of the liver.

Tetrads, lemon-yellow, cream, and dark cream were not unusual in my specimens. One closely resembled the micrococcus tetragenus aureus which was found by Boutron in human milk, only in this case indol was formed, which the tetragenus aureus does not form. I also found a lemon-yellow motile bacillus, and in two cases I recognized yeast cells. Twice, water bacilli were present—in one instance the bacillus annulatis, and in the other the bacillus arborescens, which looks as though the ice cream had been contaminated by water.

In one instance I isolated what I believed to be the gas bacillus, or B. aerogenes capsulatus. After injection into a rabbit I recov-

[4] "Milk In Relation To Public Health."—GEORGE M. KOBIR, M.D. Washington Government Printing Office, 1902. Document No. 441.

ered it from the blood of the heart and lungs, but was unable to obtain a pure culture.

With reference to snowballs, which, of course, contain no milk, the number of bacteria in them seems on the whole to be rather less than in ice cream, but the finding of the colon bacillus indicates that the ice used in these particular snowballs was contaminated, and therefore unfit for such use.

To sum up, my observations thus far have led me to the conclusion:

First—That cheap ice cream is extremely poor in fat, and that even in specimens from good confectioners the per cent. is not high.

Second—That the number of bacteria in ice cream is not materially higher than that found in fresh cream, though it is slightly higher.

Third—That the kinds of bacteria found in some of my specimens indicate either that the cows from which the milk was obtained were infected or that the handling of the ice cream was very careless, thus rendering it unsuitable for food. Both of these causes of contamination can and ought to be obviated. Thoroughly clean handling of ice cream is of as great importance as is that of milk, and the sooner doctors insist that ice cream given to their patients be only from entirely trustworthy sources the sooner will this care be given.

In conclusion, I would refer to the accompanying tables, which give further details of my work:

	% Fat.	Aerobic Bacteria in 1 c.c.	Media Used.	Anaerobic Bacteria in 1 c.c.	Bacterial Species.
Hokey-Pokey		378,000	Gelatine.	.....	Colon.
	3.4	664,000	Hiss'.	1,656,000	....
	2.	684,000	Hiss'.	840,000	....
	1.25	1,000,000	Gelatine.	. .....	....
	1.4	9,204,000	Hiss'.	.....	....
	1.6	6,840,000	Hiss'.	5,664,000	Bacillus Annulatus.
	2.	660,000	Gelatine.	.....	....
	2.	5,000,000	Agar.	1,872,000	....
	2.8	1,500,000	Gelatine.	444,000	.. ..
	3 4	11,112,000	Hiss'.	1,000,000	....
	3.6	36,600,000	Agar.	.....	Colon, Pneumococcus,
	3.8	2,670,000	Gelatine.	.....	....
	4.5	5,067,000	Agar.	..... .	Coccus.
	5.	15,000,000	Agar.	3,324,000	Pneumococcus.
Ice-Cream	5.4	17,500,000	Hiss'.	.....	....
	6.	6,260,000	Agar.	2,230,000	....
	8.	5,718,000	Agar.	.....	Bacillus Arborescens.
	8.	7,200,000	Agar.	2,000,000	Colon.
	8.	8,280,000	Agar.	2,400,000	Pneumococcus?
	8.	6,720,000	Agar.	.....	....
	8.8	1,110,000	Hiss'.	3,000,000	Yeast.
	9.4	2,030,000	Gelatine.	91,000	....
	11.2	3,160,000	Agar.	.....	Lemon Yellow Tetrad.
	....	4,250,000	Agar.	234,000	Cream-colored Tetrad.
	....	1,776,000	Agar.	212,000	The Gas Bacillus, Streptococcus and Yellow Tetrad.
	...	3,155,000	Hiss'.	362,000	Yeast.
Snowball.....	....	1,404,000	Hiss'.	....	Colon.
	....	400,000	Hiss'.	....	Colon.
	....	250,000	Hiss'.	....	Colon.

Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

THE TREATMENT OF CIRRHOSIS OF THE LIVER.

Greenough (*American Journal of the Medical Sciences,* December, 1902) discusses the recent proposal to bring cirrhosis of the liver within the scope of surgical relief, and has collected practically all the reported cases of this mode of treatment in this condition.

The operation advised first by Talma and first performed by Morrison and Drummond is based upon the theory that by increasing the adhesions the anastomoses are increased and the portal congestion thus diminished, this procedure being based upon the mechanical theory of the production of ascites in liver cirrhosis.

For the biliary or Hanot's cirrhosis, Terrier and Delagenière have suggested an entirely different operation, cholecystostomy and the maintenance of a biliary fistula, they believing that this form of cirrhosis is due to an infection of the bile ducts proceeding from the intestine. The operations thus for the two forms of cirrhosis are absolutely different.

Greenough has collected 17 cases of biliary cirrhosis, of which 12 recovered, one was improved, two showed no improvement, and two died.

Frazier gives the anastomoses commonly found to exist between the portal and the general systemic circulation as follows:

1. The coronary with the esophageal and azygos veins.
2. The vessels of the cecum and colon with the internal mammary branches.
3. The hemorrhoidal with the hypogastric vessels.
4. The vesssels in the hepatic ligament and in Glisson's capsule.
5. The umbilical or para-umbilical vein in the round ligament with the epigastric vessels.

Greenough has collected 122 cases of Talma's operation for ascites, and of the 105 of these cases which were capable of analysis, 31 died within thirty days of the operation, 44 were reported improved or slightly improved after the operation, 29 showed no improvement; 9 cases of the 44 reported improved lived two years after the operation and were then improved.

The method of operation varied somewhat according to the operator; Talma recommended the suture of the omentum through the margin of the abdominal incision and the irritation of the peritoneal surface of the liver and spleen; Morrison sutured the omentum and rubbed and scratched the peritoneum over liver, spleen and abdominal wall in order to obtain more extensive adhesions. Turner sutured the omentum between the liver and the diaphragm and also sutured the liver to the abdominal wall. Schiassi placed the omentum between the layers of the abdominal wall, either between peritoneum and muscle or between the muscular layers, and this modification seems to have given slightly better results than the original operation. From a careful consideration of the cases which he has collected, Greenough comes to the following conclusions:

1. The condition known as biliary cirrhosis, with enlarged liver, jaundice, and fever and without ascites, is accompanied in a certain proportion of cases by an infection of the bile-ducts. The drainage of the bile-ducts by cholecystostomy is a proper operation for the relief of this condition when evidence of infection is present and symtomatic treatment has failed to effect relief.

2. Of 105 cases of liver cirrhosis which presented the symptoms of ascites, 42% were improved and 58% not improved by Talma's operation or one of its modifications. The mortality within thirty days was 29.5%. Nine cases were improved in health two years after the operation.

3. The nine cases of continued relief presented no marked differences from the general character of all the cases.

4. The cases in which the liver was enlarged gave a lower mortality and a higher percentage of improvement than cases of atrophic liver.

5. Cases of suture of the omentum between the layers of the abdominal wall gave a lower mortality and a slightly higher percentage of improvement than cases where only peritoneal surfaces were brought in contact.

6. Drainage increases the danger of septic infection and peritonitis, and is to be avoided. If necessary, tapping may be done after the operation.

7. The presence of adhesions or perihepatitis is of good prognostic import as regards the success of the operation.

8. The number of tappings before operation and the presence of edema of the feet and legs are of less prognostic importance than the general condition of the patient, the size of the liver and the functional activity of the liver cells.

9. Talma's operation or one of its modifications is of proved benefit in a certain limited number of cases of liver cirrhosis;

primarily for the relief of acites, and secondarily for the relief of other symptoms of portal congestion.

10. The dangers attending the operation are mainly due to the weakened resistance of the patient, rather than to the operation itself. The selection of cases suitable for operation demands more judgment than has been exercised hitherto.

11. The operation is not indicated in cases of ascites due to causes other than cirrhosis of the liver.

12. The operation is contraindicated in the presence of renal or cardiac disease, and when good evidence does not exist that sufficient functional liver tissue remains to sustain life. It is also contraindicated when complications exist sufficient in themselves to make the result of operaton uncertain.

* * *

THE CLINICAL VALUE OF CRYOSCOPY.

Gaetano (*Gazz. degli ospedali e delli clin.*, 1902, No. 75) discusses in his article the clinical value of cryoscopy from his observations in this connection during the past two years. It is necessary to carefully collect the urine during twenty-four hours, but it is not necessary, in fact it is inadvisable, to attempt to obtain it by catheterization of the ureters. Numerous observations show that when only one kidney is diseased, Δ never is less than .95 while if both kidneys are diseased, Δ is diminished often to between .45 and .50. The freezing point is not influenced by pus and albumin, and thus cryoscopy may be very helpful in differentiating between cystitis and pyelitis.

The specific gravity of the urine is independent of the freezing point, and there is also no relation between the freezing point of the urine and that of the blood. Cryoscopy is of no aid in differentiating the different varieties of nephritis, except in helping to determine the chronic congestion of the kidney in cardiac diseases and in determining whether the glomeruli or the parenchyma of the kidney are affected in the early stages of the disease.

* * *

THE DIAGNOSTIC AND PROGNOSTIC VALUE OF THE DIAZO REACTION.

Nizzoli (*Riforma med.* 1902, No. 118 and 119) from a consideration of a very large amount of material in the hospital at Padua concludes that the reaction is still of great practical value. Although it is met with in a number of other diseases, Nizzoli believes that it has a definite diagnostic value in typhoid fever, as it was present in all the cases of this latter disease that he studied, and helped markedly in arriving at a diagnosis in those cases where the Widal reaction was not present.

As to the prognostic value of the reaction he believes that this

is of most importance in pulmonary tuberculosis. According to him the presence of this reaction is the sign of a rapid and unfavorable course of the disease, and he believes that in this disease the diazo reaction may be regarded as a safe criterion of the intensity of the process.

* * *

THE IMMUNIZATION OF CATTLE AGAINST TUBERCULOSIS.

Pearson and Gilliland (*Philadelphia Medical Journal,* November 29, 1902) report the results of their experiments upon the immunization of cattle against tuberculosis, these experiments being suggested by the fact that some cattle seem to have a specific resistance to tuberculosis as noted when one tests an extensively tuberculous herd with tuberculin.

MacFadyean and Von Behring have also carried on experiments on this same line, and each has definitely shown that it is possible to definitely increase the resistance of cattle to tuberculosis by the process of immunization by inoculation. The experiments of Pearson and Gilliland were performed as follows: A series of non-tuberculous cattle was inoculated intravenously, each seven times between March 24 and June 2, with gradually increasing quantities of a standard suspension of a culture of sputum tubercle bacilli not virulent for cattle. In all, 125 c.c. of this suspension were administered, representing about .16 gramme of tubercle bacilli. These animals as well as control animals were on July 29 inoculated by injecting into the trachea 10 c.c. of a standard suspension of bovine tubercle bacilli known to be virulent for cattle. The vaccinated and the control animals were subsequently killed, and from the results of the autopsies Pearson and Gilliland believe that they are justified in concluding:

1. That after repeated intravenous injections of cultures of tubercle bacilli from human sputum, the resistance of young cattle to virulent tubercle bacilli of bovine origin may be increased to such an extent that they are not injured by inoculation with quantities of such cultures that are capable of causing death or extensive infection of cattle not similarly protected.

2. That intravenous injections of much larger quantities of cultures of human sputum tubercle bacilli than are necessary to confer a high degree of resistance, or immunity, upon the vaccinated animal, may be administered without danger to that animal.

SURGERY.

Under the Supervision of Hugh H. Young, M.D., Baltimore, Assisted by H. A. Fowler, M.D.

Inoculation Metastasis of Carcinoma. By Professor Olshausen. *Deutsche med. Wochenschrift,* October 16, 1902.

Olshausen states that the evidence of inoculation metastasis is increasing. We may say that in numerous cases of carcinoma which have their origin in the ovary or in other organs metastasis to the peritoneum results through inoculation.

Olshausen performed a laparotomy in a case which proved to be an inoperable carcinoma of the ovary. The abdomen was closed immediately. Two weeks later the patient died of embolism, and the autopsy showed many hundred metastases over the peritoneum which were not present at the time of operation. Among gynecologists the question of inoculation metastasis has increased in importance since Winter called attention to the fact that after removal of carcinomatous uteri metastases developed which were to be explained as arising from inoculation at the time of operation. This view is not accepted by all. We cannot say how commonly inoculation metastasis occurs, but that it does occur there seems no doubt. After the removal of a carcinomatous uterus the author has seen in two cases a recurrence of the carcinoma after a longer or shorter period which was confined to the scar of the vaginal incision, and it is evident in such cases the recurrent carcinoma was transplanted at the time of operation.

The report of a second case is as follows:

A woman, twenty-nine years of age, had a double ovariotomy done for a papillary cystoma of the ovary situated in the broad ligament. Papillary cystomata are always suspicious of carcinoma, especially when bilateral. Within six months after operation a tumor appeared in the right side of the abdomen which grew gradually, and which was confined to the right side of the scar. The tumor was very prominent, and could be easily clasped by the palpating hands. The tumor did not involve the left side of the scar. The fact that the tumor grew outward rather than inward and that it was confined to the right side of the abdominal scar would seem to indicate that it developed from inoculation at the time of operation.

As early as 1886 the author reported a case of ovariotomy for pseudo-myxoma, which was followed by the development of numerous tumors of the peritoneum, which attained the size of eight to ten pounds, and even more. These tumors presented the same structure as the original growth, and were apparently due to a soiling of the peritoneum at the time of operation.

Baumgarten published an interesting case of an ovarian cystoma which developed metastases in the abdominal wall. The metastases were extraperitoneal, and had the same structure as the primary

growth. Although Baumgarten does not state whether or not the metastastic tumor developed along the margin of the scar, yet from consideration of the history Olshausen concludes that this is a case of inoculation metastasis.

* * *

Surgical Treatment of Epilepsy. By Roswell Park. *American Medicine,* November 22, 1902.

In order to determine whether modern surgery has advanced the treatment of epilepsy it is necessary to contrast the operative with the non-operative or medicinal and dietetic treatment.

The cases of epilepsy presenting surgical phases may be classified as follows:

A. Those presenting reflexes from peripheral irritation, such, *e. g.,* as those caused by phimosis, by sensitive scars, by rectal or nasal polypi, and probably those connected with eye-strain.

B. Cases of gross anatomic lesions within the cranium, *e. g.,* pachymeningitis, tubercle, gumma or brain abscess, bone fragments, deep brain scars, cysts, adhesions resulting from old fractures, etc.

C. Cases of so-called essential epilepsy of non-traumatic origin, presenting distinct localizing phenomena.

In discussing the surgical treatment the cases which justify it may be classified under two headings:

A. Those which call for the relief of some peripheral irritation, *e. g.,* circumcision, excision of scars, of irritable ulcers, etc.

B. Those in which operative intervention is directed toward the nerve centers.

This class is again subdivided into—

1. Those in which the centers are directly influenced, to be treated, perhaps, by ligature of the vertebral arteries or by excision of the cervical sympathetic.

2. Those calling for direct attack upon the brain or its membranes, including craniectomy or operation on the deeper parts thus exposed.

There is much to make us believe that during an attack of epilepsy the brain presents a condition of anemia. Accordingly it is physiologically correct to excise the sympathetic in certain patients, since the vaso-constrictor nerves are mainly found in this structure, and its removal abolishes vascular spasm. The effect of the operation would be similar to that of amyl nitrite. There is a marked difference of opinion among surgeons as to the blood supply of the brain during epileptic attacks. Operations upon the sympathetic is based upon cerebral anemia, while the benefits resulting from trephining and craniectomies finds its explanation, according to Kocher, in the relief given to intracranial blood-pressure and the equalizing effect thus produced.

Statistics are misleading, as there is no uniform limit decided upon as to the time which should elapse without seizures before we

may say that a patient is cured. In cases treated surgically this limit has, by general consent, been placed at three years.

From a consideration of cases reported it would seem that those treated surgically show a much larger percentage of cures. As regards surgical interference for the relief of epilepsy two important factors enters into consideration, but are often overlooked. The first is the late period at which operations of all kinds are performed. Patients always come too late. The second factor is the notion that when surgery is resorted to it is in, and of, itself sufficient. Surgical interference must be regarded as only the first step in a prolonged course of treatment.

In regard to prognosis, besides the ordinary dangers of shock and infection, the conditions to be feared are post-operative paralysis and prolapse of the brain. The former quickly disappears; the latter condition is prevented by some osteoplastic method or by filling the large defects with some form of plate, as well as carefully sewing the dura.

The following conclusions are reached:

1. Epilepsy is the last disease to which surgical measures should be indiscriminately applied. In judiciously selected cases radical operations of various kinds, suited to the individual needs of each case, have given far more satisfactory results than non-operative or medical treatment.

2. Every case must be studied as a problem by itself. The only general laws applying are those regarding the removal of peripheral or local foci of irritation and the destruction of paths of conduction which convey disturbing impulses. In each case we must decide as to the operative method by which we may best meet these indications.

3. In order to attain the best results patients should be seen early. It would be well to have every epileptic carefully studied by an accomplished surgeon, who should review the case with a view to the possibility of surgical intervention.

4. Operation, when indicated and undertaken, should be regarded as a first measure to be followed, and often preceded, by others looking to a correction of all faults of diet, of elimination, etc. Long-continued attention to these matters is the price of eventual success.

5. In those cases characterized by blanching of the face, when the seizures can be warded off or mitigated by the prompt use of amyl nitrite, we may well consider the propriety of an exsection of the cervical sympathetic.

* * *

INVOLVEMENT OF REGIONAL LYMPH GLANDS IN CANCER OF THE PYLORIC END OF THE STOMACH. By Dr. Lengemann. *Arch. f. klin. Chir.*, Band 68, Heft 2.

The final results in resection of the stomach for carcinoma are still very unsatisfactory. Death from recurrence and metastases is the rule in the majority of cases. The results in such cases can be

improved only by a careful search for the infiltrated regional glands. The results in mammary carcinoma have been greatly improved by the work of Haidenhain, and in carcinoma of the uterus by the studies of Wertheim.

The article is divided into—

1. Résumé of work done.
2. Anatomical considerations.
3. Material and technic of the research.
4. Findings in twenty cases, which are reported at length.
5. Results.

In twenty cases 189 glands were examined, 79 of which were diseased—42 per cent. In one case all the glands were affected.

In nine complete cases, in which all glands adjacent to the lesser curvature were removed, in only one case were all found to be free. This group of glands of the lesser curvature, as Cuneo pointed out, is more prone to metastasis than those of the greater curvature.

The subpyloric group of glands shows a smaller per cent. of metastases (37 per cent.). In twenty cases, seven were found with no metastases to this group, and in four cases one gland only was affected. Although, as a rule, the glands lying in closest anatomical relations to the tumor are the first to become involved, just as one would expect from the direction of the normal lymph flow, yet in two cases the infiltrated glands were situated farthest toward the fundus, with normal glands intervening between these and the primary tumor.

In the retropyloric group 60 per cent. showed metastases, indicating the importance of careful examination of this group in extirpation of cancer of the pyloric end of the stomach.

In the use of the terms "enlarged" and "not enlarged" in the macroscopic description of glands one must decide upon an arbitrary standard. The author considers those glands enlarged which measure 10x5 mm., while 8x8 mm. is considered under the limits, and therefore not enlarged. Adopting this standard, the author finds that the glands which are to be described as enlarged show under the microscope in many cases typical carcinomatous infiltration. It is pointed out also, and this is a most important observation, that numerous glands which were not enlarged, and on gross examination showed no signs of involvement under the microscope, were found to show extensive carcinomatous infiltration.

Examination of glands macroscopically cannot give one definite information as to whether or not they are infiltrated. Glands normal in appearance were found involved in the cancerous process, while a few enlarged glands, both soft and hard, were found to be free from metastases, the change being due to "catarrh" of the lymph sinuses or hyperplasia of the connective tissue elements. This change is found in chronic inflammation of the mucous membrane of the stomach from various causes.

As to the manner in which the lymph glands become involved, is it due to a spreading from the tumor by continuous growth along

the lymph channels, or are the tumor-cells, after entering the lymphatics, swept away to the nearest lymph gland, there to be arrested and give rise to the development of metastases? Borrman states, from the study of two cases, that the development of metastases in cancer of the stomach is always by growth in continuity, the growth taking place along the lymph channels to their finest branches.

The author, after a careful study of twenty cases, concludes that in the majority of cases metastases develop here, as in cancer of the lip and tongue, by the tumor cells entering the lymph stream and being carried to the glands, where they are arrested and set up a new growth. Exceptionally, metastases do occur by continuous growth from the primary tumor.

In closing, Lengemann points out that the results of his investigations emphasize the importance, in resection of the stomach for carcinoma of the pylorus, of removing all the regional lymph glands, together with the attached omentum, and adds that this is easier said than done.

REVIEW IN PATHOLOGY AND BACTERIOLOGY

Under the Supervision of José L. Hirsh, M.D., Baltimore.

Paratyphoid Fever. N. E. Brill. *Medical Record,* November 29, 1902.

Some years ago (1897) the author published a report of seventeen cases which clinically resembled typhoid fever, but failed to give a Widal reaction. Bacteriological examination failed to demonstrate the presence of the typhoid bacillus, although no evidence of positive value was obtained. In the light of more recent researches by Gwyn, Cushing, Libman, and others, the author claims that his cases were undoubtedly of the paratyphoid class.

The term paratyphoid is unfortunate, as it neither indicates the infectious agent nor the clinical aspect of the disease. Some authors speak of the bacillus as paratyphoid, others as paracolon. All are, however, agreed that this disease is caused by a bacillus which is intermediate between the typhoid and the colon bacillus, and, while resembling both in some particulars, it differs from both in others, as shown in the table:

	B. Typhosus.	B. Coli.	Paratyphoid.
Milk.....	No coagulation.	Coagulation.	No coagulation.
Glucose....	No fermentation.	Fermentation.	Fermentation.
Lactose....	No fermentation.	Fermentation.	No fermentation.
Indol.....	Negative.	Positive.	Negative (?)

The first cases of infection in man by the paracolon group was reported in 1896 by Achard and Bensaude. The number reported up to date is sixty-two cases, in twenty-five of which the organism was isolated.

The changes in the tissues indicate an acute general systemic infection without special localization. Of the cases reported, only three have come to autopsy, the first one being that reported by Libman, who isolated from the patient's blood, from the contents of the gall-bladder, and from his urine during life a paracolon bacillus. This bacillus was agglutinated by the patient's serum, and his serum likewise agglutinated bacillus typhosus. Clinically, the case resembled that of a cholecystitis or liver abscess, with a negative Widal reaction at first, which later became positive in high dilutions. No typhoid bacilli were found. At the autopsy healed ulcers in the ileum, as well as ulcers showing a reparative process, were found. Libman regarded this as a typhoid case with a subsequent paracolon infection. In both of the other autopsies (Strong and Longcope) the large and small intestines were reported to be normal, no changes being noted in the solitary follicles or Peyer's patches.

An analysis of all the cases will show that the symptoms present mark two groups of cases—the one showing the usual signs of an infection or toxemia, with so-called typhoid-fever symptoms; the other beginning more abruptly with gastro-intestinal symptoms. These cases differ from typhoid fever by having no premonitory symptoms to usher in the disease—the rather sudden elevation in temperature, reaching its acme in four to five days; the sudden fall of temperature (crisis), the absence of tympanites and abdominal tenderness, and the short duration. The blood serum in these cases does not react to the bacillus typhosus.

In conclusion, the author points out that paracolon (paratyphoid) infections are not very rare. The infection is a systemic one, and its symptomatology is like that of typhoid fever, from which it can only be differentiated absolutely by the cultural and agglutination tests. The differentiation clinically between the two infections most likely depends upon the superimposed localization of the typhoid infective agent in the intestines in typhoid fever, and its probable absence there in paracolon infections.

It is of interest to note that other organisms besides the Eberth bacillus may produce the clinical symptoms of typhoid fever.

* * *

A Study of Immunization, Hemolysins, Agglutinins, Precipitins, and Coagulins in Cold-Blooded Animals. Hideys Noguchi. *University of Pennsylvania Medical Bulletin,* November, 1902.

Noguchi gives an account of twenty-four experiments conducted on cold-blooded animals at Woods Holl Marine Laboratory, and draws the following conclusions:

1. Artificial hemolysins, agglutinins, antiagglutinins, serum precipitins, aqueous-humor precipitins, and milk coagulins can be produced through immunization in certain cold-blooded animals.

2. The hemolysins and agglutinins for erythrocytes can be produced in animals which do not possess erythrocytes.

3. Iso-agglutinins and iso-hemolysins can be produced in certain species of turtles. The iso-bodies thus developed have a slight erythrolytic action upon the blood of other, though related, species of turtles.

4. The complements of turtle's blood are rendered inactive by a temperature of 50° C. maintained for thirty minutes.

5. Precipitins and coagulins for aqueous humor and milk, respectively, can be produced in animals which do not possess the corresponding fluids in the strict sense.

6. The above facts demonstrate the widespread distribution of common receptors through the animal kingdom, and extend the chief tenets of Ehrlich's hypothesis to invertebrates and vertebrates among the cold-blooded animals.

In a second paper, entitled "The Interaction of the Blood of Cold-Blooded Animals, with Reference to Hemolysis, Agglutination, and Precipitation," the author concludes—

1. The sera of many cold-blooded animals contain both agglutinins and hemolysins.

2. The sera of some cold-blooded animals contain precipitins.

3. The amount of agglutinin, hemolysin or precipitin in any given serum is no measure of the amount of either of the other principles.

4. The sera of some species of animals, while strikingly agglutinative for certain kinds of corpuscles, may be entirely or almost devoid of hemolysins for these, or even other kinds of corpuscles. Conversely, the occurrence of active hemolysins in a given serum is likely to be attended with the existence of marked agglutinating properties for some species of corpuscles.

5. From their manner of action the conclusions that a multiplicity of agglutinins and hemolysins occur in sera is rendered highly probable.

6. The agglutinins are active upon red and white corpuscles irrespective of whether the animal yielding them possesses both red and white or only white corpuscles. The hemolysins are erythrolytic and leucolytic if obtained from animals possessing red and white corpuscles, while in certain animals possessing only white corpuscles, hemolysins, in contradistinction to agglutinins, are wholly or almost entirely absent.

* * *

SYPHILIS OF THE LIVER. Charles G. Stockton. *Journal of the American Medical Association,* November 8, 1902.

It is apparent that there is no fundamental difference between the pathology of congenital and acquired syphilis. In either one

we may have the diffused hepatitis or parenchymatous degeneration, to be succeeded by the ingrowth of fibroid tissue; secondly, we have gummata occurring in large tumors, in scattered masses, in miliary granulomata, or in the budding stage as mere aggregations of lymphoid cells. In some instances the liver is apparently invaded through the lymphatic system, not infrequently by the route of the peritoneal cavity, and still other cases in which the disease manifests itself especially in the blood-vessels, producing the most striking symptoms of obstructing some branches of the hepatic veins, or by the obliteration of some of the portal branches or distribution of the hepatic artery.

Among the clinical manifestations are, first, increased bulk of the liver; second, deformity of its contour; third, roughening of the adhesions to its surfaces; fourth, obstruction of the bile passages, causing jaundice; fifth, obstruction of the blood passages, causing ascites; sixth, perihepatitis, causing pain, tenderness, and sometimes contraction of the liver. Disturbance of general nutrition and albuminuria are not infrequently present.

Occasionally the syphilitic disease may expend its force on the lymphatic system, with a low-grade peritonitis and involvement of the retroperitoneal lymph nodes.

The author reports three cases of syphilis of the liver. The first in a man of forty-five years, with a diffuse syphilitic hepatitis, the liver extending two inches below the ribs, accompanied by marked ascites. Under antisyphilitic treatment great improvement was noted. Case 2 showed a single large gumma in the right lobe of the liver, and likewise on mercury and iodides immediate improvement was observed, until finally the previously-enlarged liver was reduced to normal. Case 3 shows the possibility for a gumma of considerable size to develop in the liver without the association of marked constitutional symptoms. The patient presented a lump in the right side, which was believed to be malignant. The man appeared to be in fair health, and absolutely denied any venereal history. After a course of inunctions for three months the tumor disappeared.

The author states his belief that hepatic complications are more common in syphilis than one is likely to infer from the literature of the subject. The cases are generally classed as cirrhosis of liver or carcinoma.

* * *

Report of the Cancer Commission of Harvard University. *Journal of Medical Research*, 1902.

The object of the commission was to study the cause of cancer, or, rather, to investigate each of the claims offered by men who believe that cancer is due to a parasite.

1. *A proliferation of the epithelial cells analogous to cancer can be produced by certain protozoa.* Tyzzer reports the lesions pro-

duced by the coccidium oviforme in the liver of rabbits. The histological changes are as follows: After the invasion of the epithelium by the protozoon the epithelial cell degenerates and is destroyed. This produces a defect in the epithelial lining of the duct, and inflammatory exudation appears. Following the destruction of epithelium there comes an increase in the underlying connective tissue which pushes into the bile duct to form papillae, and a proliferation of epithelium occurs in order to cover in the defect. Repair is brought about by walling off the lesion by connective tissue. No metastases occur. In only one case does the parasite in the least resemble the so-called "parasite" of cancer. The lesions produced by coccidium oviforme are essentially those of chronic inflammation. Tyzzer concludes that the lesion produced by coccidium oviforme is essentially those of a chronic inflammation not analogous to cancer.

2. *Certain skin lesions characterized by epithelial-cell proliferation are due to the action of so-called protozoa.* White refutes this claim, and shows that the lesions in molluscun contagiosum are characterized by changes in the epidermis not due to the action of protozoa, and not analogous to cancer.

3. *Blastomycetes constantly are present in human cancers, and are the cause of the lesion.* In investigating this claim Richardson made an extensive series of culture experiments with fresh cancerous material, and as a result of his investigations he concludes that it is impossible to cultivate from new growths anything which can be regarded as a specific infective agent. Weiss studied the morphology and culture peculiarities of four blastomycetes, and considers all four organisms studied to be torulae.

4. *By experimental inoculation of animals with blåstomycetes, true epithelial or cancerous nodules can be produced.* Nichols made an extensive study of inoculation experiments, and presents the following conclusions: 1. Certain blastomycetes are pathogenic. 2. They produce in animals spontaneously infected acute inflammations, abscesses, or nodules of granulation tissue. 3. In human beings spontaneously infected they produce acute inflammation or proliferation of endothelium and connective tissue. The occasional proliferation of the epidermis is secondary to the chronic inflammation of the corium, and is not analogous to cancer. 4. Blastomycosis in human tissue is rare. 5. The lesions produced in animals experimentally are inflammation or nodules of granulation tissue. Sanfelice's "successful" cases are coincidents, and not results. 6. The toxic power of blastomycetes is small. 7. Blastomycetes primarily extend along lymphatic clefts. 8. Rarely there may be a blood dissemination and general infection. 9. Secondary nodules are the same as the primary, *i. e.*, composed of granulation tissue. 10. The morphology of the cancer body is not identical with the blastomycetes. 11. Blastomycetes are not constantly present in

human cancers. 12. When they do occur they are not present in such numbers and in such a relation to the lesions as to justify the belief that they are the cause.

In general conclusions the commission holds that cancer bodies are not parasites or the cause of lesions, but are probably atypical stages of the process of secretion by glandular epithelium.

* * *

The Relation Between Pernicious Anemia and Achylia Gastrica. H. Adler. *American Medicine,* November 15, 1902.

Adler reports three cases of pernicious anemia, in all of which there existed the clinical evidences of atrophic gastritis associated with the characteristic blood changes, and likewise certain symptoms pointing to involvement of the spinal cord. He discusses the question, Is there a fundamental trouble underlying these pathological conditions of the blood, stomach and cord, or is one the cause of the other?

Fenwick was the first to demonstrate atrophy of the stomach in pernicious anemia, although Austin Flint had expressed such a belief many years previous. The consensus of opinion is that the anemia is secondary to the gastro-intestinal atrophy. However, the gastric atrophy cannot be regarded as the direct or immediate cause, for numerous cases of gastric atrophy occur without pernicious anemia resulting. The work of Hunter sheds light on this point. According to the results of his investigations, pernicious anemia is essentially hemolytic. There is a rapid disintegration of the red-blood cells which is confined to the portal area, as evidenced by the enormous amount of blood pigment found in the liver, while but little is found in the other organs. He further found that the whole process suggests an intoxication, and the features of the disease can be reproduced by poisons having a special hemolytic action.

Additional evidences of the toxic nature of the disease is shown by the clinical features—the fever, changes in the spinal cord, and the occurrence of ptomaines in the urine. The gastric atrophy presents the conditions favorable for the elaboration and absorption of the toxins, acting as a predisposing cause. The anemia, then, is a symptom of the disease.

REVIEW IN NEUROLOGY.

Under the Supervision of Robert Reuling, M.D., Baltimore.

On the Symptomatology of Headaches. B. Hirsch. *Butache med. Wochenschrift,* No. 27, 1902.

A man, aged eighteen, was suddenly seized with an epileptic attack after having worn glasses of —5.00 for two and one-half years. From that time on the patient suffered from headache, and the epileptic attack recurred every six or eight weeks. An examination by Hirsch revealed hypermetropic astigmatism. By the use of glasses of + 3.50 full vision was obtained, and the headaches subsided, but not so the epileptic seizures. The author considers the immense accommodative strain under the wrong glasses as the exciting element of the epilepsy. Some other cases of wonderfully wrong "corrections" of errors of refraction by opticians are enumerated.

* * *

The Localization of the Mental Faculties in the Left Prefrontal Lobe. Charles Phelps. *American Journal of the Medical Sciences,* May, 1902.

The author has consulted an immense amount of literature in order to determine how much knowledge we possess at the present day which would warrant the belief that the mental faculties are principally located in the prefrontal lobe. His observations are limited more or less to three classes of cases—1. Atrophies; 2. Pistol-shot wounds; 3. Abscesses and tumors.

He says cerebral atrophies are usually unsuited to the study of cerebral localization because of the general cerebral disturbances, as in idiots, lunatics, and epileptics. Twelve cases are noted as left or general hemiatrophy of the brain, with mental defects.

Out of 150 pistol-shot wounds, 26 cases were of cerebral wounds to right side. None of these presented at any time any symptom of mental or emotional disturbance, aside from the stupor or delirium which is a characteristic of general shock to the brain tissue. In 32 cases the ball traversed the upper frontal lobe; 13 of these showed mental derangement. This series of cases indicates, however, that the intellectual and emotional derangement are symptomatic not only of a lesion of the left frontal lobe, but also of its anterior and central portions.

Out of 607 abscesses or other limited cerebral lesions, 137 involved the frontal lobes; 51 of these cases were limited to left frontal lobe, of which 46 presented symptoms of mental default or disorder. The mental symptoms varied from dementia to stupor, apathy, loss of memory, changes in character, delusions, simple disorder of speech. Destructive lesions were usually followed by mental default rather than by mental aberration. Tumors or ab-

scesses of large size showed stupor or apathy rather than positive psychical changes.

The author comes to the following conclusions:

1. The more absolutely the lesion is limited to the left prefrontal lobe the more positive and distinctive are the symptoms of mental default.

2. The integrity of the mental faculties remain unimpaired in right frontal lesions, though it involves the destruction of the entire lobe, or even extends to the entire hemisphere.

3. The exceptional instances in which seemingly opposite conditions exist are always reconcilable on more careful examination with the assertion of an exclusive control of the mental faculties residing in the prefrontal region of the left side.

* * *

Etiology and Treatment of Migraine. Aiken. *Journal of the American Medical Association,* August 30, 1902.

The author is a strong believer that heredity plays an important part in the etiology of migraine. This view is favored by the fact that it frequently makes its appearance in early manhood, and continues until after the middle third of life. Dissipation, mental strain, worry, loss of sleep are contributory to attacks of migraine. The author favors the following treatment: From the inception to the conclusion of a migrainous attack digestion is practically suspended. This condition certainly demands the withholding of nutrients, with immediate dilution and elimination of the gastric and intestinal contents. Emesis and lavage of the stomach are efficient, but often objectionable to the patient and inconvenient to the physician. Consent is much more readily obtained for emptying the lower bowel with hot soapsuds enema, followed immediately by high irrigation of large quantities of normal salt solution. This, with small, but oft-repeated, draughts of hot water by the mouth, continued for six to twelve hours, has given better results in Aiken's treatment of migraine than any purely drug medication. Between the attacks daily and copious drinking of water will do more to lessen the severity, if not prevent recurring attacks, than any or all drugs, with only a minimum of water ingested. It would be quite irrational were we to neglect correcting any existing ocular, aural, nasal, gynecological, or rectal defect. We must also teach them how to eat, and warn them against abuse of their already defective nervous system.

* * *

Spinal-Cord Tumors—Tumors of the Central Nervous System—Remarks on Noteworthy Cases. Joseph Collins. *Medical Record,* December 6, 1902.

Part of this paper appeared in the *Medical Record* February 15, 1901. The present article especially refers to the present status of

the treatment of spinal-cord tumors. It is to this part of the article that this review is especially directed. The very interesting discussing of the clinical symptoms of tumors of the cord must be omitted, and the reader is referred to the original paper. Collins says that not longer than fifteen years ago Gowers and Horsley showed that a properly-diagnosticated case could be operated successfully. Spinal-cord tumors are more susceptible to surgical treatment than brain tumors, and a greater percentage recover. Nevertheless, the majority of spinal-cord tumors prove fatal, and must continue to do so for three reasons—(1) Inability to diagnosticate and localize them; (2) the nature and extent of their growth, which makes them inaccessible or inoperable; and (3) because of the jeopardy of life that the operation brings. Spinal-cord tumors must be rare in comparison with brain tumors. The diagnosis of spinal-cord tumor is much more difficult than that of brain tumor. The latter cause a clinical picture that is fairly constant and very characteristic; the former does not, particularly in its early stages.

Statistics of Spinal-Cord Tumors.—The statistics of operation for spinal-cord tumors have been gathered in this country by Mills and Lloyd (*Pepper's System of Medicine*), by Starr (*American Journal of the Medical Sciences,* 1895), by Putnam and Warren (*American Journal of the Medical Sciences,* October, 1899); in England by Gowers and Horsley (*Transactions of the Medico-Chirurgical Society of London,* 1887), and in Germany by Bruns in 1896. The author has gathered from the accessible literature the cases that have been published during the last six years, and a brief abstract of these are appended to his article. He quotes the history of seventy cases. Operation was undertaken in thirty cases.

The results of the operations in these thirty cases were as follows: Successful in twelve instances, partially successful in eight, and wholly unsuccessful in ten cases. The operation was considered successful when there was cessation of pain and recovery of motor power; partially successful when there was relief from pain, cessation of progress of case, and slight repair of motor power; unsuccessful when followed by death within a few weeks. As the nature of the tumor is not always stated in the reports on operated cases, the author only found the following: There were six of fibroma, twelve of sarcoma of one kind or another, three of endothelioma, and one of myolipoma. The cause of death as given in nine of the cases that terminated fatally was sepsis and septic meningitis in four cases, collapse and exhaustion in two cases, shock and hemorrhage in two cases, and pneumonia in one case.

Collins says: "If we add to this lot the fourteen cases which the autopsy records show might have been successfully operated upon if the diagnosis had been made, we find that forty-four out of seventy cases of intraspinal tumors might have been treated surgically,

i. e., forty-four cases were operable. This is an extremely high percentage in comparison with the operability of brain tumors. It is not so high, however, as that given by Starr, who was of the opinion in 1895 that 75 per cent. were operable. The author's belief is that operability of spinal-cord tumors is considerably less than the percentage which his statistics seem to give. Starr in 1895 found records of 123 cases, and in these operations had been undertaken twenty-two times, while in the seventy cases collected by the author it had been undertaken thirty times, showing that the tendency to operate on spinal-cord tumors is apparently becoming more popular.

The Results of Operation for Spinal-Cord Tumor.—If one were to base his opinion upon the published reports of Schultze, one could readily believe that the surgical treatment of spinal-cord tumors was extremely successful. Basing a statement upon the reports of cases operated upon and those that have come to autopsy without operation, it may be said that 50 per cent. of intraspinal tumors are operable, and of the number from one-third to one-half are benefited by operation. Spinal-cord tumors are, therefore, twice as successful.

Schulze has recently given a synopsis of eight cases of spinal-cord tumors. In two the diagnosis was erroneous; in the other six, all of which were operated upon, three recovered—two completely, and one partially; in two, death followed the operation. In one of the cases in which death resulted there was a large tumor at the level of the cauda equina; in the second there was annular tumorous thickening of the dura, which could not be removed.

When one considers the hopelessness of these cases when treated medicinally it will readily be seen that surgical interference is the only hopeful recourse.

The urgency of the symptoms requires that the cases be diagnosticated and operated upon early, *i. e.,* before inflammatory, edematous, anemia, necrotic, or degenerative changes that are irreparable have gone on in the spinal cord.

A question that frequently arises after operation is, To what degree may improvement be expected to result in a case that has shown but little recovery of function in two or three months after operation? Examination of the published cases shows that if improvement does not follow soon after the operation, it does not occur to any degree at all. It must at once be added, however, that in many cases there is immediately after the operation an accession of paralytic phenomena which are not to be attributed to changes produced in the cord by the tumor itself, but are secondary to the trauma of the operation. These, as a rule, disappear.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD NOVEMBER 3, 1902.

In the absence of Dr. Osler the chair was taken by Dr. Hurd. Dr. J. Whitridge Williams was elected as president of the Society for the coming year, and Dr. Martin B. Tinker was re-elected as secretary.

Typhoid Spine.—Dr. McCrae showed a patient who had this interesting sequel of typhoid fever, and in addition presented strange rhythmical contractions of the abdominal muscles. The patient was neurotic throughout his illness, and six weeks after his temperature became normal developed the present condition. It is the seventh instance of typhoid spine in thirteen years. The contractions of the abdomen suggest pulsations of the abdominal aorta, but are found not to be synchronous with them. When one's hands are placed upon the abdomen they are pushed out forcibly. These rhythmical contractions, which evidently take place in the recti, recur from seventy-six to eighty times a minute. During sleep the contractions stop; a few whiffs of chloroform increase them perceptibly. The whole condition is a neurosis.

Abdominal Aneurism.—Dr. T. W. Clarke presented a case whose physical signs had led to an interesting mistake in diagnosis. When the pain first came on, five years ago, the patient was treated for rheumatism, then for neuralgia, later still for lumbago, and within the present year the diagnosis was made of renal lithiasis, and the patient was operated on in another hospital. The probable reason for the incorrect diagnosis was the fact that the pain radiated into the testicle.

Dr. McCrae: It is interesting to notice in this case the systolic retraction of the intercostal spaces, as well as the pulsation in the right side of the back. I remember a case in which a similar mistake in diagnosis was made. In the present case the expansile tumor can be easily grasped, and the pulsations are very plainly transmitted to the hand. The case seems to be a very favorable one for operation, and the case will, therefore, be put in the hands of the surgeons.

Exhibition of Pathological Specimens Illustrating Some Noteworthy Features in the Thrombosis of Vessels.—Dr. W. G. MacCallum: The first specimen is that of a thoracic aneurism in which the bronchus to the left lung was compressed by the sac of the aneurism.

The second specimen is a liver from rather an old negro, who during life had marked swelling of the legs and abdomen. He had luetic scars in various parts of his body. The liver is not a regular hobnail liver, but is very small and irregular, there being large nodular masses along the retroperitoneal region. There was a large mass above the liver surrounding the vena cava and extending into the lungs. In the liver there are scarlike strands which caused destruction of the organ, as well as yellowish, caseous-looking masses which look like rubbery tumors. Below the liver smaller masses are seen in and about the glands, compressing the vena cava and

causing thrombosis in that vessel, which is just beginning to organize. The liver is markedly congested; there is a breaking down of parenchymatous cells, and a new formation of connective tissue. Orchitis was present in this case.

The third specimen was from a case of mitral stenosis who during life had phenomena which gave evidence of thrombosis in various parts of the body. The popliteal and the left brachial arteries and the left jugular vein were cordlike during the latter part of life. The patient died of cardiac insufficiency, and a few hours before death was seized with paraplegia, the legs becoming quite livid. The heart is uniformly enlarged, the cricuspid valve is contracted and calcified, the right auricle is dilated, and the mitral valve also constricted so that one finger can scarcely be passed through it. There are also present aortic stenosis and insufficiency, and a thrombus is seen in the left auricular appendage. The left jugular vein, as well as the subclavian, which appear as fibrous cords, are seen to be penetrated by fine canals, whose presence is the more easily recognized when the cords are squeezed. There are two possible ways in which this canalization could have occurred—either by branches from the vasa vasorum, or by a process described by Dr. Welch. He speaks of cracks occurring in the thrombus and endothelium growing in from its extremities. Both types of canalization are present here. The abdominal aorta is filled with a thrombus extending 3 cm. above the bifurcation, down through the iliac and into the femorals, thus occluding the last two lumbar arteries as well as the branches of the iliacs. The thrombosis was originally present in one of the femorals, and doubtless followed an old embolus. Embolic infarcts were present in the kidney and spleen, but the origin of these could not be determined. Out of fifty-nine cases of thrombosis described by Dr. Welch there was mitral stenosis in thirty-nine.

Experimental paraplegia has been produced in rabbits by ligating the aorta. There is also a transverse myelitis produced, and in one case degeneration of the pyramidal tracts was observed. In cats and dogs the results of ligation of the aorta are not constant.

Dr. McCrae: The thrombosis in the case with the syphilitic cirrhosis of the liver was probably not the cause of the symptoms seen during life.

The presystolic murmur in the third case shown by Dr. MacCallum was heard over a wide area, but there were no other signs of cardiac valvular lesion.

Dr. Thayer: It seems to me that the tricuspid stenosis might possibly have been suspected, although this lesion quite frequently escapes attention. A presystolic murmur is not very often heard at the tricuspid area, but the diagnosis must be made from the venous engorgement and from the pulsation. In this case there was no pulmonary engorgement, nor were there any rales at the base of the lungs.

Appendicitis, with Intestinal Obstruction.—Dr. R. H. Follis: The first case is a girl, fifteen years old, who was admitted on May 28 with a history of three days' illness. The attack was an ordinary one, with nausea, vomiting, constipation, abdominal pain, and tenderness. During the operation an abscess was found, reaching far out into the right side. The case was just the kind in which obstruction might have been expected because of the large amount of gauze drainage. The patient did well for forty-eight hours,

when she showed symptoms of obstruction. For twenty-four hours we tried to move the bowels with cathartics and enemata, but failed. The pulse rose from 110 to 120, and then to 160. The patient's condition being very serious, she was again taken to the operating-room, and enterostomy was done. An incision was made through the left rectus, and the first loop of distended bowel which presented was brought up into the wound and opened. The peritoneal cavity was probably soiled when the bowel collapsed, and it was the realization of this fact that suggested the procedure used later on. The patient now did well for eighteen days, and the foul-smelling discharge, which is always present in an obstruction case, was soon replaced by normal fecal discharge. After eighteen days, although the fecal fistula was discharging freely, the patient had another attack of intestinal obstruction, apparently in a loop proximal to the site of the loop first opened. A third operation was done, incision being made through the right rectus. The bowel was brought up into the abdominal wound, packed around with gauze, and catgut sutures were taken, passing through the intestinal wall, through the gauze and the parietal peritoneum. By a series of such sutures the bowel was held in place against the two edges of the wound. When enterostomy was done and the bowel collapsed the peritoneal cavity was prevented by the gauze from being soiled.

After each of these operations the bowels began to move per rectum within about forty-eight hours, evidently showing that the obstruction was due to a distension of the bowel, at least in part; and as soon as this distension was relieved the obstruction was also relieved. The patient did well for about three weeks, and the fistulae were beginning to close, when, after an indiscretion in diet, a third obstruction developed, and it became necessary to open up one of the previous wounds. Since that time the patient has had no trouble, and is now perfectly well. I feel sure that if we had tried to search for the obstruction the patient would have died. I want to emphasize the fact that patients are often lost by trying to do too much for them at a time when they are very much run down and when their resistance is very poor. At such a time an enterostomy is the operation of choice, and the method of doing the enterostomy which I have described is, I think, cleaner and quicker than any other method I know of, and has the further advantage that the wound heals spontaneously. In this case all the fecal fistulae closed spontaneously within three weeks of the time they were made.

The second case is that of a boy who was sent in with a history of twelve days' acute abdominal pain and vomiting. Vomiting in appendicitis usually occurs at the beginning, and is not continuous, but in this case it was marked all through, and there were paroxysms of pain from the outset. He was in very bad shape when admitted, and had already been refused operation by another surgeon in the city. There was a great deal of abdominal distension, visible peristalsis, and other signs of acute obstruction, so that the diagnosis of appendicitis was not made until the abscess was reached. We did not look for the appendix, but simply brought a loop of bowel up to the wound and sutured it in the way that I have described, the whole operation lasting less than twenty minutes. Enterostomy was done twenty-four hours after the abscess had been drained. The boy made an uninterrupted recovery, his fistula and abscess wound being closed thirty days after the operation. In this case, also, if we had tried to relieve the obstruction

or do anything except make an artificial anus the patient would surely have succumbed.

On being questioned by Dr. Cullen as to what became of the appendix in such cases, Dr. Follis replied that the all-important thing was to save the patient's life at the time of operation, and only to take out the appendix when it could be readily found. Patients are always advised to return in ten or twelve months to have the appendix removed, but acute symptoms recur in comparatively few cases. Although the appendix is removed in the majority of cases, there are some cases with abscess in which it is far more important to save the patient's life at the time than to remove the appendix.

Dr. Follis went on to say that there were doubtless certain cases of peritonitis with marked distension in which this method might be used. Of course, it is not a new thing to open the bowel in general peritonitis to relieve the distension, for it is a well-known fact that the prognosis in general peritonitis is graver the more distension there is. It certainly seems as if this method of opening the bowel would be more satisfactory than any other for use in cases of general peritonitis. Usually a second operation has to be done for closing the bowel, but it is evident that by this method, if we can judge by two cases, the fistula closes spontaneously.

Book Reviews.

Atlas and Epitome of Abdominal Hernias. By Georg Sultan, First Assistant in the Surgical Clinic of Göttingen. Authorized translation from the German edition, by William B. Coley, M.D., of New York. With 119 illustrations, 36 of them in color. Philadelphia and London: W. B. Saunders & Co. 1902.

This little book of 285 pages is a notable addition to the literature of hernia. It is divided into two parts, the first dealing with hernias in general, the second with the special hernias.

In the first part are considered the anatomy, origin, general diagnosis, general treatment, and the accidents of hernia. Under the latter are discussed fecal stasis, inflammation, and strangulation, with the detailed treatment of strangulated hernia.

In the second part the various forms of hernia are taken up in detail, including a brief consideration of the rare forms. The inguinal, femoral, and umbilical forms receive the careful treatment which their frequency and importance merit.

The volume is profusely illustrated, this being its most important feature. The subject-matter is well written, terse and clear. The notes by the editor of the English edition makes the work particularly valuable for its American readers.

It is gratifying to note in the treatment of inguinal hernia that little space is allotted to the treatment by a truss, although the essential points are fully covered.

The various methods of performing the radical operation may be reduced to three typical operations, involving, as they do, essentially different prin-

cipals—the operations of Bassini, Kocher, and Macewen. These three operations are fully described and beautifully illustrated.

Statistical tables are introduced showing the frequency of hernia, mortality, and percentage of recurrence. The volume can be highly recommended for its careful treatment of this important subject.

Atlas and Epitome of Traumatic Fractures and Dislocations. By Professor Helferich, Professor of Surgery, Royal University Griefswald, Prussia. Edited by Joseph C. Bloodgood, M.D., Associate in Surgery, Johns Hopkins Hospital, Baltimore, Md. Fifth edition, revised and enlarged, with 216 colored illustrations on 64 lithographic plates, and 190 figures in the text. Philadelphia and London: W. B. Saunders & Co. 1902.

This volume of 350 pages sustains the high standard of the previous volumes in this series by the profuseness and unexcelled quality of its illustrations. Such a book could come only from a very large clinic where the material is abundant and carefully worked up. The various forms of fractures and dislocations are beautifully illustrated, including the rarer forms. Extensive use has been made of skiagraphs throughout the book.

The text discusses concisely, but fully, the methods of production, symptoms, diagnosis, prognosis, and treatment of the various forms of fractures and dislocations.

Little space has been given to treatment. This feature of the book is somewhat disappointing. The wealth and beauty of the illustrations make the volume valuable as a reference book.

A Text-Book of Diseases of the Nose and Throat. By D. Braden Kyle, M.D., Clinical Professor of Laryngology and Rhinology, Jefferson Medical College; Rhinologist and Otologist, St. Agnes' Hospital; Bacteriologist to Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases; Fellow of the American Laryngological Association, etc. With 175 illustrations, 23 of them in colors. Second edition. Philadelphia: W. B. Saunders & Co. 1900.

This work is reviewed with pleasure, as there is much room in this country for a good American text-book upon the subject.

The book is excellently written, and treats of the different diseases in a most exhaustive manner, each chapter being complete and up-to-date, the plates well executed, and faithfully illustrating the various subjects.

The chapter on the anatomy and physiology of the nose is too brief, hardly any reference being made to their embryological formation. The instructions on illumination and examination are well illustrated by cuts. The author gives a most thorough and masterly consideration of the various diseases of the nose and throat, there being little to criticise and much to praise.

The various forms of treatment are sufficiently described to give a range of choice among remedies in common use.

The author has omitted references to many monographs, but has given credit to their authors.

This work is of the highest order, and should be well received by the profession.

M. R.

MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

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BALTIMORE JANUARY, 1903

PLAGUE IN CALIFORNIA.

THE Conference of State and Provincial Boards of Health of North America passed at New Haven on October 29 some resolutions severely condemning the State Board of Health of California for its disgraceful misconduct in connection with the plague at San Francisco, and advised all State boards of health to consider the propriety of asking the Surgeon-General of the United States Public Health Service to call a conference for the purpose of eradicating plague from the United States. Many State boards took up the suggestion of the New Haven resolutions, and within four weeks seventeen States had requested Surgeon-General Wyman to call such a conference. The Surgeon-General has replied that such a conference will be called immediately upon his return from San Francisco.

This conference will have a very important influence in determining the future relations of the United States Public Health and Marine Hospital Service to the State and municipal boards of health. These relations have in the past been too often discordant.

It has often been said that the tendency of the Marine Hospital officials has been to disregard the rights and authority of local officials, and to parade unduly their own importance. Whether this be true or not, certain it is that many local officials were for several years distinctly hostile to the United States Marine Hospital Service, and the question has often been asked whether the United States Public Health Service has not indirectly contributed by some such default to the complications of the plague question in California.

Even if that were so, the coming conference will hardly take cognizance of it, for the conduct of the State Board of Health of California has been so outrageous that no amount of repentance will win them a single plea in extenuation.

The situation is too serious to permit the consideration of any minor question. Not much has been heard concerning plague in California since the New Haven resolutions were passed. Only four deaths from plague were reported in November, and Surgeon Mark White, who discovered them, was removed from San Francisco on December 12.

Twice before, when the attention of the country has been strongly concentrated upon San Francisco, the amount of discoverable sickness in Chinatown has fallen far below normal. Plague can only be found when the State Board of Health blunders. A short time ago there was first-class evidence that several places in California outside of San Francisco were infected, but the State Board of Health got there well in advance of the Marine Hospital surgeons, and only serene peace was discovered.

Happily for the cause of truth, though in other respects most unfortunate, we are no longer dependent upon California for evidence of plague at San Francisco. The town of Ensenada in Mexico, not far below San Diego, is reported to have plague, imported from San Francisco. San Diego is in a state of alarm. It is also said that Mazatlan, Mexico, has been infected from San Francisco. Moreover, it is now believed that Honolulu got her infection last year from San Francisco.

There is no longer any doubt that plague has attacked the rats in San Francisco, and among the human cases the pneumonic form of the disease has made its appearance.

The story of the abominable conduct of the State Board of Health of California has gone round the world. Ashburton Thompson in far-off Sydney, Australia, enforces against San Francisco a stricter quarantine than against any other port, because, as he says most significantly, the authorities elsewhere "have dealt frankly with the matter."

The press of San Francisco has taken of late a tone that to the uninformed observer might seem encouraging. The newspapers are now advocating the cleansing, and even the obliteration, of Chinatown. But the same organs have advocated the same measures before, with just sufficient energy to persuade the outside world that something was about to be done, and when the outside world returned to its own business the newspapers returned again to their abuse of those who are vainly endeavoring to rid the city of bubonic plague.

PROFESSOR LORENZ IN AMERICA.

"Good luck have thou with thine honor: ride on, because of the word of truth, of meekness, and righteousness."

It should, as a rule, be superfluous to say that a distinguished person has very good manners. The remark might, indeed, reflect a left-handed distinction in one's own manners. But manners, like beauty, are often no more than skin deep, and wear very badly under severe exposure. The distinguished Austrian surgeon who has toured the chief American cities, surrounded by a din of adulation, has borne himself through it all with surpassing grace and dignity. It is not superfluous to say that Lorenz has good manners, for the admiration of the American people was in his case a delirium so importunate that only the most massive simplicity could have withstood it.

It is an evidence of the world-wide view of American medicine that when a Chicago millionaire wanted the very best man for a particular piece of work his advisers knew where to find that man. His mastery of a domain in surgery entitled Lorenz to this distinguished consideration, but it must be confessed that the furore with which he was received took the profession by surprise. It must have been still more astonishing to Lorenz, and a lesser man would have found it intoxicating. A slight breach of good taste might have cooled the enthusiasm of the profession, and popular good-will is even more fickle. He acknowledged the interest of the people very gracefully, but went about his work with absolute single-mindedness. Apparently he did not know that his situation was a delicate one, and this is the last perfection of good manners.

Back in the seventies a famous American orthopedic surgeon created as

much professional interest in Europe, but no first-rate man ever had so much newspaper praise as has been bestowed on Lorenz. If ever an American physician should receive honors abroad of like amount and character, we can wish for our compatriot no better luck with his honor than has attended the visit of Adolph Lorenz in our own land.

FRAUDULENT IMPERSONATION AT STATE EXAMINATIONS.

FRAUDULENT impersonations of candidates for license to practice medicine have several times been exposed, but how many such impersonations have been wholly successful one can only guess.

The Baltimore newspapers published about May 1, 1902, a brief account of the arrest of a Baltimore physician at Parkersburg, W. Va., on a charge of fraudulent impersonation before the West Virginia Examining Board. The Parkersburg papers gave detailed accounts of the affair. A recent graduate of a medical school in Baltimore, a resident of Belle Vernon, Pa., had made an engagement with a West Virginia mining concern to become the company's physician, and for that purpose desired a West Virginia license. When the date of the State examinations arrived a young man carrying a suit-case marked D. R. S. registered at a hotel in Parkersburg as David R. Shepler of Belle Vernon, Pa., and presented himself before the Examining Board with certificates of good moral character and a lawful diploma from the Baltimore medical school. He was assigned a seat and received his examination papers. It happened that a person from the same part of Pennsylvania registered a little later, and seeing the name of an old acquaintance, went to find David R. Shepler. The examiners were presently apprised that the candidate was not present in person, but by proxy. They at once telegraphed a detective in Baltimore to locate David R. Shepler, and in an hour or two were advised that David R. Shepler had been located at the medical college in Baltimore.

At the end of the day's work the false David R. Shepler was confronted in his room at the hotel by the examiners with the proofs of his fraud. He refused at first to give his name, but at length did so, throwing himself upon the mercy of his accusers, saying that he was Dr. Thomas H. Magness, a teacher in a medical school, and that exposure would ruin both himself and a dependent family. He was arrested, and before the magistrate entered a plea of guilty. Later he amended his plea and secured counsel.

At his trial he was released on account of a defect in the form of his indictment. The offense is a felony according to the law of West Virginia, and the word "feloniously" was omitted in drawing up the indictment. He was thereupon rearrested and released under a bond of $500. When the date of his second trial arrived Magness failed to appear, and his bond was forfeited to the State.

The Examining Board of West Virginia at once, upon the confession of his identity, wrote to the medical school inquiring if such a man was connected with their teaching body. In reply it was said that the young man had occupied a minor position, but had recently severed his connection with the school.

When the announcement of the school was distributed in the summer it was found that the name of T. H. Magness still appeared among the adjunct faculty.

Medical Items.

THREE cases of plague arrived at the port of New York on December 15 in the ship Saxon Prince from Natal, South Africa.

AN epidemic of measles is now prevailing in Baltimore. Several of the counties are also suffering with widespread measles.

SURGEON-MAJOR S. CHASE DE KRAFFT will shortly return from the Philippines and resume the practice of medicine in Cambridge, Md.

THE towns of Ensenada and Mazatlan, Mexico, are reported to have plague. The source of their infection is said to be San Francisco.

MR. HENRY WALTERS will present to the city of Baltimore a third public bathhouse on condition that the city council will provide for its maintenance.

PHILADELPHIA HOSPITAL is to have eight pavilions of steel and glass for the treatment of consumptives. They are to cost $125,000. The contract for construction has been awarded.

MAJ. RONALD ROSS of the Liverpool School of Tropical Medicine has been awarded one of the five Nobel prizes. This prize of $40,000 was awarded for Ross' studies in malaria.

DR. JOHN B. SCHWATKA narrowly escaped serious injury on December 7, when his carriage was in collision with a street car. Dr. Schwatka was thrown from his carriage and severely bruised.

THE senior students of the medical department of the University gave a successful concert at Lehmann's Hall on December 22 for the benefit of the endowment fund of the University of Maryland.

A SERIOUS epidemic of food intoxication occurred recently at the Naval Academy in Annapolis. One hundred and fifteen cadets were affected, but no death occurred. The offending food is said to have been sausage.

DR. HOWARD KELLY read a paper on December 4 before the Obstetrical Society of Philadelphia on diseases of the urethra and Skane's ducts. A reception was given Dr. Kelly at the home of Dr. John Fisher, president of the society.

THE year 1902 closes with ten cases of smallpox in the State of Maryland, all in Worcester county. Seven cases are in Snow Hill and three in Stockton. The outbreak at Elliott's Island, Dorchester county, is over. There were seven cases in all.

THE Board of Health of Sydney, Australia, is enforcing a scrupulous quarantine against San Francisco, making a very pointed discrimination between San Francisco and other infected places whose health authorities have "dealt frankly with this matter" (bubonic plague).

THE newly-elected officers of the Medical Society of the Woman's Medical College of Baltimore are: Dr. Annie C. Shipley, president; Dr. Jennie R. Brown, vice-president; Dr. Charlotte S. Murdoch, treasurer; Susie A. Price, recording secretary; Henrietta M. Thomas, corresponding secretary.

DR. FRANCIS F. FORWOOD of Belair, Md., died suddenly in Mecklenburg county, Virginia, on December 8. Dr. Forwood, while out deer-hunting with some friends, was seized with a chill. He called to a companion who was near, asking to be taken home. A few minutes later he was found lying upon his face quite dead.

AN unlicensed drug clerk in New York recently sold some children a mixture of almond oil and castor oil. They returned in a short time and complained that the mixture did not smell of almond oil. The clerk added some oil of bitter almonds, and in another short time the grandmother and one of the children died of cyanide poisoning.

AMONG the cases of plague occurring in San Francisco in October and November, the pneumonic type of the disease appeared. Several plague-infected rats have also been found of late, so that the situation is no less alarming, notwithstanding the smaller number of cases discovered in November and December as compared with the October list.

THE smallpox situation in Pennsylvania is seriously complicated by the extinction of the emergency fund. This fund, originally amounting to $50,000, was reduced by Governor Stone in 1899 to $25,000, and the last legislature abolished it entirely. The State Board of Health is consequently unable to respond to the numerous calls for assistance, and smallpox is said to be on the increase.

On December 6 the new law of Colorado went into force, requiring all invalids boarding trains in that State to be provided with a physician's certificate of non-contagious disease. This law will give distinction to a specialty in medical practice which has hitherto kept as far as possible out of public view. Consumptives will have to employ certifying specialists.

The New York Academy of Medicine announces a prize of $1000 for the best essay on the etiology, pathology, and treatment of diseases of the kidneys. The competition is open to the regular profession of the United States, and essays must be in the hands of the committee of the trustees, 17 West 43d street, New York city, before October 1, 1904. The prize is known as the Edward N. Gibbs Memorial Prize.

In Boston recently the father of a family was seized with smallpox. He was removed to the hospital, the house was disinfected, and the wife, daughter, and grandmother were ordered to be vaccinated. The family physician being called in, told the three women that, in order to conform with the regulations of the Board of Health, he would scratch their arms and apply the virus. They could prevent a "take" by washing the scarification with alcohol. The grandmother did not apply alcohol as directed. She escaped attack. The other two women washed the virus away with alcohol; both were attacked by smallpox, and one of them died.

Dr. Martin B. Billingslea, one of the best-known physicians of East Baltimore, died at his home, 1206 East Preston street, on December 7 of pneumonia. The primary cause of death was a pyemia contracted while operating several weeks previously. Dr. Billingslea was born in Harford county, Maryland, fifty-three years ago. He graduated at the University of Maryland in 1874, and had been active in professional circles since that time. Dr. Billingslea was also deeply interested in church work and in the public schools. He was also a prominent member, and several times the president, of the Northeast Baltimore Improvement Association. He is survived by his wife, who was Miss Gilbert of Buena Vista, Pa., and by three children. Dr. Billingslea left his medical library and $50 a year to the Medical and Chirurgical Faculty of Maryland.

At the eighth regular meeting of the Section of Ophthalmology and Otology of the Medical and Chirurgical Faculty on December 11, 1902, the following minute, proposed by Drs. Samuel Theobald, Russell Murdoch, and Hiram Woods, was unanimously adopted: "The members of the Ophthalmological and Otological Section of the Medical and Chirurgical Faculty of Maryland have learned with deep sorrow of the death of their friend and fellow-member, Dr. Aaron Friedenwald. His philanthropy and his nobility of character have already been dwelt upon by other friends, who, like ourselves, were impressed by his possession of these traits. We desire to place on record the high esteem in which he was held by his professional associates. During many years he presented, and has left behind him, a noble example of professional integrity, faithful performance of duty, and devotion to scientific truth. We shall miss his pleasant companionship in our meetings and the instructive lessons which his close observation and ripe judgment often brought to us. To his family we offer sincere sympathy in their sorrow. We suggest that this minute be entered in our proceedings, that it be published in the Maryland Medical Journal, and that a copy be sent to Dr. Friedenwald's family."

The Maryland State Tuberculosis Commission met at 10 South street, Baltimore, on December 12. The blanks and forms of inquiry are now ready for distribution. Record blanks for certain data concerning cases of tuberculosis will be distributed to all institutions in the State having medical officers and supported in whole or in part by public funds. These records are to be returned at regular intervals to the Tuberculosis Commission. Special inquiries will also be made concerning deaths returned as due to tuberculosis, and concerning cases reported to the State Board of Health and to the Baltimore City Health Department.

The grand jury of Baltimore county recently found three indictments against the owners and an employe of a large department store in Baltimore for slaughtering for human food two animals known to be unfit for human food by reason of disease or injury. One indictment is against Ferdinand Bernheimer, one against Ferdinand and Herman Bernheimer (Bernheimer Bros.), and the third is against John Schaeffer. Schaeffer is a butcher employed by Bernheimer Bros.

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THE FUTURE POLICY OF MARYLAND IN THE CARE OF HER INSANE.

By Henry M. Hurd, M.D.,
Baltimore.

AN ADDRESS TO THE NEUROLOGICAL SECTION OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND, NOVEMBER 14, 1902.

A YEAR ago you honored me with an election as chairman of the Section on Neurology and Psychiatry, and I thank you sincerely for this undeserved and unexpected honor. Instead of the usual program of the evening, the secretary has decreed that I shall present the retiring address upon some topic of general interest of my own choosing. In view of the fact that our proceedings during the past year have had a neurological rather than a psychological trend, and the added fact that the section in which we are interested is a section of the Medical and Chirurgical Faculty of the State of Maryland, and not a local medical organization, I have decided to speak briefly of the future policy of Maryland in dealing with her insane. The subject is threadbare, and possibly a source of weariness like any other thrice-told tale. It is, however, a topic upon which the State, sooner or later, must take positive action. It is our duty as medical men to give proper advice, and to reiterate the advice until it is accepted, if we would have the State do what she ought to do for the proper care and treatment of the dependent insane. It is not sufficient in this age of the world to excuse the shortcomings of a State in any form of proper care of the dependent and defective classes by a plea of poverty. There is always money enough for what a State earnestly desires to do, whether to build a railroad, to erect a penitentiary, to dig a canal, to build a State capitol, or to complete a hospital for the insane. If the public sentiment of a State is so aroused as to demand enlightened and adequate treatment for her insane, it will be found feasible to meet the demand. It consequently is our duty as medical men to agitate, and agitate, and agitate until State care is secured for all the dependent insane of Maryland. Socrates many years ago said that "the State is a great and noble steed, who is tardy in his motions owing to his great size, and requires to be stirred into life." Hence

he added, with a rather mixed conception of the capabilities of the insect, "a gadfly is necessary to fasten upon the State, to arouse, persuade and reproach, lest the State may fall asleep." Notwithstanding, however, the indifference of the public and the tardiness of public sentiment to demand better things, progress has been made, and today the condition of the insane in Maryland is better than it has ever been before.

Five years ago, at the annual session of the Medical and Chirurgical Faculty of the State of Maryland, a symposium on State care of the insane, arranged by the committee on program, was participated in by Dr. Brush, the late Dr. Rohé, the late Dr. Lee, and the writer. The papers which were presented served to bring into public notice the defects of the laws which then existed, and to emphasize the steps which should be taken to improve our methods of caring for the dependent insane. In the discussion which followed considerable sensitiveness was displayed at any seeming criticism of the state of affairs which undoubtedly existed, and any suggestion that improvements were desirable was bitterly resented. Some of this feeling was probably due to what may be termed patriotism. Certain statements which I made were especially obnoxious, and called forth severe strictures. To show that the positions which I then assumed were not extreme, I take the liberty of briefly summarizing what I said. I declared that the State needed a Commission to represent the State in lunacy matters—a Commission which should supervise and inspect regularly and efficiently the State institutions for the insane, also the corporate and private asylums, and the almshouses, jails and county receptacles—in short, every place where the dependent insane are sheltered. It should scrutinize and, if necessary, revise all commitment papers, and keep an accurate, reliable registry of all the insane in the State, so that the exact number may be known. It should have authority to determine the legal residences of insane persons, and should be charged with the duty of sending wandering insane persons to their legal residences, whether within or without the State. It should, further, have the duty of reporting upon the manner in which the large sums of money appropriated for the care of the insane, both by the State and the city of Baltimore, are expended, so that waste and unjustifiable extravagance may be avoided and a proper expenditure of the funds for the benefit of the insane may be ensured. I further said that there are serious defects in the present lunacy laws. The work of the Commission is not co-ordinated with any other branch of the State government, and the Commission has no machinery at its back to enforce its views. The law for the commitment of the insane is very imperfect, and its provisions are not strictly and efficiently enforced. The rights of Baltimore as against the counties of Maryland are not protected, and the city is made the dumping-ground of the insane of the State at large without any means of redress.

I added that the statistics given in the report of the Lunacy Commission cannot be verified, and on their face are incorrect. The

inspections made by its secretary, if we may judge from the published reports of the Commission, are of a very perfunctory character, and this officer seems satisfied if the establishments are found "clean" and their inmates "uncomplaining." We hear little or nothing as to night nursing for the sick, night service for the feeble or untidy, or employment for the chronic insane. Under the circumstances the conclusion is inevitable that the present law furnishes inadequate protection for the State, the institutions, the public at large or the unfortunate insane patient. The remedies are simple. A better law is needed for the Commission, giving it greater powers and holding it to a stricter responsibility for its executive work. The Commission should have power to establish a proper standard of care for the insane throughout the State and to enforce it. This standard of care should require trained nursing for the sick, night attendance upon the feeble and helpless, the abolition of all forms of restraint, adequate provision for the employment of the chronic insane, and an absolute prohibition of the confinement of the insane in jails.

Since this was written numerous efforts have been made at successive sessions of the legislature to amend the law governing commitments to institutions for the insane. But, although the step has been recommended by the Neurological Society and other medical organizations, and much private effort has been put forth by the members of the profession at large to procure legislation, it is evident that the medical profession as a whole and the inhabitants of the State do not desire to have additional safeguards thrown around the admission of insane persons to institutions. The majority of the people of the State seem to be perfectly satisfied with the degree of protection which is now afforded to insane patients. From the standpoint of the physician, who sees in every insane man a sick man and in every institution for the insane a hospital, it is entirely logical that admission to institutions for the insane should be as easy as admission to a hospital. And as physicians we have no need to complain that a medical view has obtained in these matters. It is consequently, in my judgment, unwise for us to agitate the matter further or to make any special attempt to amend and improve the law of commitment. That the time will come when public sentiment in the State will demand a better law I have no doubt, nor have I any doubt that it is for the interest of the insane and for the protection of physicians that a more perfect law should be enacted at an early day. The demand, however, must come from lawyers rather than from physicians. The present indifference in the matter, while due in part to a lack of unity in the medical profession and to a failure on the part of the public to perceive the advantages of a better law, is more to be ascribed to the *laissez faire* which characterizes the American people.

That a great improvement has occurred in the work of the Lunacy Commission is evident upon a glance at the last report to the governor of the State, dated December 1, 1901. This report shows most careful and earnest work on the part of the efficient

secretary. There is the same deficiency in accurate statistical matter, but the difficulty, I understand, is beyond the reach of the Lunacy Commission. The great need on the part of the Lunacy Commission is for increased powers. They not only should have powers of visitation, but should likewise have certain powers of administration conferred upon them. It should be possible for them to prescribe a standard of care for all public institutions for the insane in the State. I cannot do better at this point than to copy the language of the last report: "The Lunacy Commission was established some sixteen years ago, and while it has done a great deal for the amelioration and protection of the insane, still its usefulness has been greatly crippled by the very limited powers conferred upon it. It is merely an advisory board, with practically no power to act. Unquestionably, its sphere should be greatly widened, and it should have greater authority. It should have practical jurisdiction over all the insane in the State under law, and should be empowered to remove cases at its discretion from one institution to another. It should also have the right to discharge cases that, in its judgment, are improperly committed and held without recourse to processes of law. While it has power to grant licenses for the establishment of private institutions for the care and treatment of the insane, it should have the right, which it does not now enjoy, to revoke a license when, in its judgment, the superintendent of an institution is incompetent or derelict in his duty. If these powers were granted, the Lunacy Commission might become an active, and not merely a passive body, as it is at present."

There has been during five years a great improvement in institutions for the insane. The oldest institution in the State at Catonsville, known as the Maryland Hospital for the Insane, has shared the general advance in the better care of patients. In the construction of buildings and workshops and in the care and nursing of patients, and especially in the employment of patients, the institution has accomplished much for the better treatment of its patients. The opening of the new institution at Springfield, near Sykesville, has also done much to relieve the crowding at Spring Grove and at Bayview. The theory of the organization of Springfield is an excellent one. It provides for the separation of different classes of patients into manageable groups, and by this segregation prevents much of the feeling which exists in regard to closed institutions—that masses of patients are crowded together, and that individuals thus gathered fail to receive the individual attention which their condition requires. The only criticism to be made upon the institution at Springfield is the fact that it has grown and developed slowly, and has consequently not been able to relieve other institutions in the State to the extent which was desired. There also seems to have been a disposition during the past two years on the part of the legislature to cease to develop it. Personally, I regret that a group of buildings has been erected for epileptic patients, as I fear such a development will interfere with the proper provision for epileptics by means of a colony in some other portion of the

State. The epileptic group should be used wholly for cases of epileptic insanity, at any rate. Little or nothing needs to be added in reference to the corporate institutions of the State, namely, the Mount Hope Retreat and the Sheppard and Enoch Pratt Hospital. They are doing excellent work as psychopathic hospitals, and are contributing to our knowledge of the pathology of insanity and the scientific treatment of the insane.

When we read the report of the Commissioners in Lunacy we cannot avoid the impression that the county almshouses and county receptacles are in more sanitary condition, and that the insane therein confined are better cared for than they were five years ago. And yet in these institutions great defects are evident from reading the notes made by the secretary of the Commission. Out of twenty institutions, three are commended, nine are said to be bad, and eight have a modified commendation. The institutions which are commended from the standpoint of proper care of the insane really do not deserve it. I cannot do better than to present some of the notes which have been published in regard to several county institution, so that you may see how imperfect the best are for the sheltering and care of the insane. We will take first the so-called county asylums.

Montevue Hospital (Frederick County).—"The buildings, while not constructed according to modern ideas, are clean and fairly well furnished, although the general equipment of the institution is distinctly below what it should be. The bathing facilities, for example, are inadequate. As to the question of occupation, one of the most important factors in the treatment of the insane, this is almost wholly neglected. An institution which harbors from 130 to 140 patients yearly should endeavor to stand abreast of the modern ideas and provide occupation and recreation for its patients. Workshops should be provided, and the patients should be employed in farm work. This, of course, requires a certain outlay of money and the employment of more assistants, but if the trustees accept as many pay patients as they do, they should endeavor to provide the same facilities that are furnished at our State institutions, since the patients pay the same pro rata. The only logical conclusion to be drawn from these facts is that Montevue should either improve its equipment and provide more attendants, or only receive patients from its own county. The day has, fortunately, passed when custodial care alone is demanded for the insane. No criticism can be passed upon the management of the institution. The trustees, superintendent and physician are most conscientious and diligent in the performance of their duties, and are heartily interested in their work, but there is not sufficient money forthcoming from the county to equip and conduct this large hospital in accordance with modern ideas. The purely custodial idea is very humanely carried out in this asylum, but certainly something more is demanded in this twentieth century."

Sylvan Retreat (Allegany County).—"The criticism that has been passed upon the other county asylums holds good for this one.

The patients are well fed and cared for; the building, while not constructed after modern plans, is clean and fairly well furnished, yet the modern idea of the treatment of the insane is wanting. There can be no possible doubt of the fact that employment is the great central idea in the treatment of the insane. The body must be kept active for certain hours of the day, and the hands employed. Practically, nothing of this sort is done in this institution. While, of course, the patients do a certain amount of housework, still something more is necessary. Every institution of this size should have workshops where various industries may be carried on, and suitable recreation should be provided. The grounds in which the patients take their recreation are unattractive to a degree, and entirely too small. The number of attendants is inadequate to the needs of the patients. The antiquated idea of merely secluding the patients prevails, without any attempt at special treatment."

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It seems needless to point out how far below a proper standard of care these county institutions are. Let us now turn to some of the almshouses:

Caroline County Almshouse.—"This almshouse continues to maintain its distinction of being one of the worst in the State. While the accommodations for the white paupers are fairly good, the cabins for the negroes are simply disgraceful. Insane or feeble-minded men and women occupy the same rooms, and the conditions are about as bad as can be imagined. In this, as in similar institutions, the fault lies not with the superintendent, but with the county commissioners, who are unwilling to increase the tax-rate to provide for this unfortunate class."

Kent County Almshouse.—"This almshouse is a disgrace to the State. The white inmates are fairly well cared for, but the accommodations for the colored patients are simply abominable. They are crowded into little rooms, with defective ventilation, and no conveniences. The county commissioners may congratulate themselves on the small cost of maintaining the insane of the county, but they cannot say that these unfortunate persons are reasonably cared for. Institutions of this sort offer an insistent appeal to the State to provide for its insane under State control. The secretary at his last visit found several cases in this institution that should be removed at once to one of our State asylums."

Queen Anne's County Almshouse.—"This institution, which has long boasted as being the best on the Eastern Shore, has of late years deteriorated. The main building, which accommodates the white paupers and mildly insane white patients, is always found in good condition. The annex, however, where the more distinctly insane are kept, was, at the last visit of the secretary, found to be far from exemplary. The rooms were ill-ventilated and foul-smelling, and not by any means clean. It is very evident that this county should not attempt to keep insane persons in its almshouse. It is all very well for paupers, but no insane persons should be sent to any such place. The accommodations for the colored inmates are disgraceful, not to employ a stronger term. This institution is one

of the very best on the Eastern Shore, and yet its attempt to care for the insane according to modern ideas is simply pitiful."

It requires no argument to support the assertion that the Lunacy Commission should have the power to transfer these insane persons to other quarters, whether county asylums or almshouses. These institutions all lack night service for patients; they lack facilities for a proper classification of the insane; they lack provision for suitable and curative employment, and, above all things, they lack proper provision for the colored insane.

Such is a brief and imperfect survey of the situation in Maryland. It now remains to speak of certain practical conclusions which legitimately follow.

1. *State Care.*—In my judgment, the effort of every physician in Maryland should be to promote State care. There is every reason to believe that the insane of Maryland will not be properly taken care of until all the dependent insane are gathered into State institutions under State care. The present system is extremely unjust to the city of Baltimore. Although it pays liberal taxes for the support of other institutions for the insane in the State, it is compelled to maintain at Bayview 369 insane persons. These patients are in an institution attached to the city almshouse, and each institution suffers from the proximity of the other. Although great improvements have been effected in the condition of the almshouses and the city asylum during the past five years, any further development of the asylum is well-nigh impossible because of imperfect buildings, a lack of means of occupation for patients, and a deficiency in land area for the accommodation of the institution. It is just and right that the State should relieve the city of Baltimore of the care of the patients who are now confined in the city asylum. It is equally just and right that the State should relieve the almshouses of the different counties of insane patients. No system of care of the insane is so unsatisfactory and so wasteful as county care. If county care is to be efficient, it becomes very expensive; if it is cheap, its economy must result from depriving the insane man of food, of clothing, of medical attendance and means of employment. There is nothing in the history of charity which is so great an anomaly as the county almshouses and county receptacles for the insane, which grew up when institutions for the insane had not been built. They were a melancholy necessity of the pioneer era in America. One would think that as soon as a State had provided institutions for the insane these county receptacles would gladly have been given up by county officers. On the contrary, it has been found by experience that each one of these institutions, which were originally makeshifts, possessed a vitality of its own which seemed to give it a lease of life far beyond its usefulness. Whether this has been due to local interest, or to mistaken notions of economy, or to the local patronage which such an institution has afforded to small politicians, or to other reasons, the fact remains that county provision for the insane has everywhere been given up with great difficulty. The evil spirit has torn the unfortunate vic-

tim whenever an attempt has been made to exorcise it. Sometimes, in fact, it has gathered to itself additional devils, and has returned, as in Pennsylvania, to curse the unfortunate community. The great desideratum in Maryland today is the rapid development of the institution at Springfield, the assumption by the State of the care of all the dependent insane, and the prohibition of county care.

2. *Reception Hospital in Baltimore.*—There should be built in Baltimore, at the expense of the city, a reception hospital for the reception and treatment for a limited time of alcoholic and nervous, border-line cases, and insane cases. This hospital should be in some central portion, not as far away as Bayview, but closer to the center of the city, possibly near some hospital, so that cases of alcoholism, maniacal excitement, hysteria, and suspected cases of insanity can be received there promptly and detained without special legal formalities for one or two weeks, or at least for a period long enough to ascertain the character of the case, and to make well-considered arrangements to place the patient either in a public hospital, in an institution for the insane, or otherwise to provide for him. As matters are at present, great hardship and injustice are done to this class of cases by reason of their hurried transfer to the different institutions for the insane or their retention in cells at police stations or in the public hospitals. Much valuable time is often lost in the treatment of acute cases, while many border-line cases are consigned prematurely to institutions for the insane under our present arrangements who might otherwise be cared for.

The best illustration I can give of the usefulness of such a reception hospital is contained in the following extract from a letter written in answer to an inquiry from the editor of the *Buffalo Medical Journal,* under date of October 15, 1902, by Dr. Frederick Peterson, one of the Commissioners in Lunacy for the State of New York: "During the five months ending June 30, 1902, there were admitted to the pavilion for the insane at Bellevue Hospital 986 patients. Of these, 652 were sent to the Manhattan State Hospital, 21 to private asylums for the insane, 33 to other institutions; 79 were sent into Bellevue Hospital as not insane, but suffering from other ailments; 182 were sent back to their friends without commitment, 27 died, and 24 remained in the pavilion. What I would call your attention to here is the remarkable fact that out of this total number of 986 admitted, 79 were sent into Bellevue Hospital as not insane, and 182 were sent back to their friends; 27 were so ill that they died in the reception hospital."

He further adds: "In the classification of diseases received at the pavilion for the insane for three months ending June 30, 1902, there were in all 584 cases. Among these were 118 cases of epilepsy, hysteria, chorea, alcoholism and the like, and 28 cases marked as not insane."

3. *Psychopathic Hospitals.*—The Sheppard Hospital, the Mount Hope Retreat, and the Maryland Hospital for the Insane at Catonsville should become psychopathic hospitals for the State of

Maryland. The Sheppard Hospital and Mount Hope Retreat should be used for the early treatment of patients from the city or for those throughout the State who can contribute to their own maintenance and treatment. It would be a great advantage if these institutions could be thoroughly hospitalized and placed on the same basis as ordinary hospitals as far as giving preference to the admission of acute patients is concerned. The same work could be done at Spring Grove for the State of Maryland. These institutions are doing excellent work now, but certain departments of them should be freed as far as possible from the chronic insane, so that the energies of the medical staff can be devoted to the curative treatment of the insane. The objection may be made that this will increase the expenses of the State far beyond what Maryland can afford, because, as we hear so often, Maryland is a poor State, and not able to make the same provision for the insane which has been made by many other States. To this it may be answered that Maryland has two excellent institutions for the insane—Mount Hope and the Sheppard and Enoch Pratt Hospital—which have been built wholly without State aid, and is therefore much better situated than other States in this vicinity, notably Virginia, West Virginia, North and South Carolina or Delaware, which have no institutions of a private or semi-private class. The State is practically free from debt and the rate of taxation is low, and the taxable basis is constantly increasing.

4. *The Colored Insane.*—Provision ought to be made for the colored insane in a separate institution. It is evident from the experience of the past twenty-five years that the colored insane are constantly increasing in numbers, and that an effort should be made at once to treat them in a well-organized institution if we are to give them curative treatment. In this respect Maryland lags behind other States, notably Virginia and North Carolina, where excellent institutions for the colored insane have been erected and maintained within the past twenty-five years and good work has been accomplished. This institution should be in the center of the colored population of the State.

5. *The Criminal Insane.*—There should also be better provision for the criminal insane. As it is now, persons acquitted of criminal charges on the ground of insanity, or persons under sentence for crime who are found insane, or who become insane at the expiration of their sentence, are in an anomalous situation. They are sometimes unjustly committed to prisons, or they may be sent to Bayview or to other institutions not well suited for their care, where their presence is a source of anxiety and danger. It is important and desirable that somewhere in the State a separate building should be erected for the insane who have committed criminal acts, or who have become insane while undergoing punishment for criminal acts, or who are in any way dangerous, and not suited to

be in ordinary institutions for the insane. Such a building might become a department in connection with the hospital at Springfield or at the Maryland Hospital for the Insane at Catonsville, preferably at the former place because of the greater area of land available there.

6. *Colonies for Epileptics and the Chronic Insane.*—I wish to impress upon you my conviction that in the future a much greater number of the insane, epileptic, and feeble-minded are to be provided for in colonies. The colonies of the insane in Michigan and Ohio, the colony for epileptics who are not insane at Sonyea, N. Y., and the colony in connection with the Manhattan State Hospital at Central Islip, Long Island, have demonstrated the economy, elasticity and facility of provision by this method. In all of these institutions the cost of buildings and grounds has not been great. In all the means of employment now furnished by their environment and a skilful use of the untrained labor of men who have had damaged brains has resulted in great economy to the State and added comfort and self-respect to the epileptic and demented. No one can read the account of what has been achieved at Central Islip given by Dr. Rowe in a recent number of the *Journal of Insanity* without feeling that it is inhumane to herd the chronic insane together in institutions without giving them an open-air life, plenty of manual labor, and an environment which will enable them to lead comparatively comfortable, happy and useful lives. Such colonies should be established at once, I repeat, for the chronic insane, the epileptic, and the feeble-minded.

Those who have read the recently-published life of Pasteur (every physician ought to read it) must have been impressed by the fact that in the mind and life of this wonderful man scientific knowledge was invariably regarded as the handmaiden of humanity. In the height of Pasteur's interest in the study of ferments, which opened the way to our present antiseptic surgical methods, he turned aside from his chosen work for five years to study the diseases of silkworms, because of the sufferings of the people in certain portions of France consequent upon the destruction of the silk industry. His subsequent studies in puerperal fever, charbon, chicken cholera, plague, and hydrophobia were inspired by a similar notion; to use his own words, "to give the heart its share in the progress of science." We may not be able to imitate Pasteur in scientific achievement and in broad and vivifying generalization from isolated scientific facts, but we can imitate his broad humanity and his desire to ameliorate the lot of the unfortunate. We cannot at present do no greater service to humanity and the Commonwealth than to use our professional influence and personal effort to promote the hospital treatment of acute cases of insanity and appropriate State care for the insane poor of the chronic class.

A CASE OF RUPTURED UTERUS SUCCESSFULLY TREATED BY LAPAROTOMY.

By Randolph Winslow, M.D.,

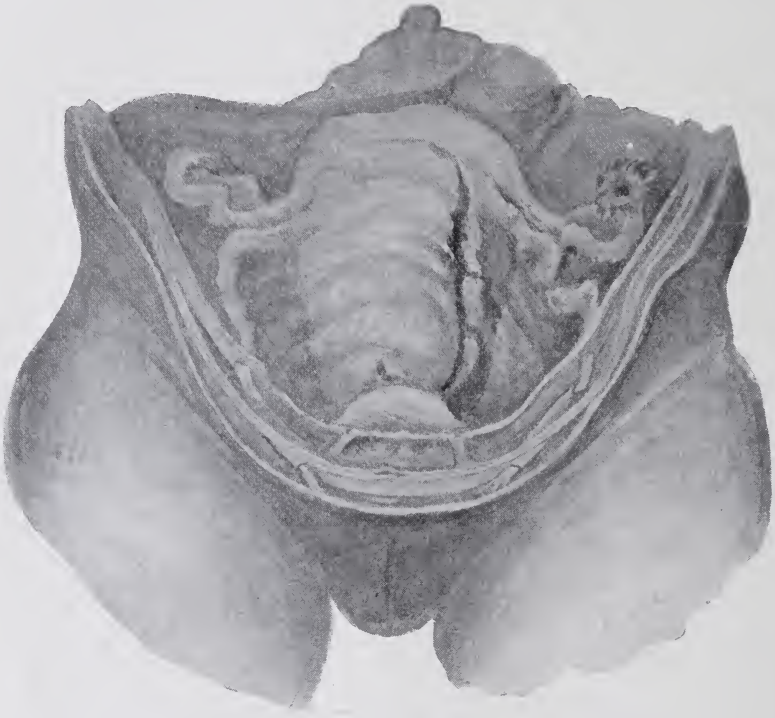
Professor of Surgery in the University of Maryland, Baltimore.

On the morning of April 21, 1902, I was summoned by Dr. Benjamin R. Benson, of Cockeysville, Md., to come to his assistance at Ashland Station, and reached my destination about 6 A. M. I found the patient to be a large, stout woman, thirty years of age, in labor with her fifth child. The right hand of the child was protruding from the vagina, and the position of the child was transverse, the head to the right, and the belly forward. Dr. Benson and his brother, Dr. J. E. Benson, had made strenuous efforts to turn and deliver, but without success, the patient being under chloroform. My efforts to turn did not succeed any better until I placed the woman on her left side, and with my left hand was able to bring down a leg, and after some difficulty extracted a large child. After waiting for the spontaneous delivery of the placenta a sufficient length of time, I introduced my hand into the vagina, when to my surprise it passed through a rent in the uterus and entered the abdominal cavity. Recognizing the gravity of the situation, I decided to send her to Baltimore for operation. Two hours later she was placed on a cot in a baggage car and conveyed to the city, a distance of seventeen miles. She arrived at the hospital about 10.30 A. M., where the following history was ascertained: Her father died in his ninety-sixth year of old age, her mother in the fortieth year of cancer of the womb. The family is a remarkably healthy one. She had borne four children previously, and has had no miscarriages, all her previous labors were about normal. Her menses appeared last about ten months ago, and she thinks that this pregnancy has lasted a month over the usual time. She had a fall in January and fractured the left ulna near the wrist, but did not receive any other injury. On April 20, she began to have labor pains, and Dr. Benson was called. He found the child in the transverse position with the arm prolapsed.

On her arrival at the University Hospital she was prepared for operation at once. Nitrous oxide gas and ether were used as anesthetics, which she took very well. The abdomen was opened in the middle line and a ragged tear was found in the uterus about six inches in length, extending from the left cornu downwards to the ring of Bandl, and then transversely across the lower part of the organ to the right side (see figure). This was sutured with three rows of sutures, the first including the whole thickness of the uterine walls, the second the muscular and peritoneal coats, and the third the peritoneal and a portion

of the muscular coats, which closed the laceration perfectly. The round ligament was also found to be torn completely across, which was doubtless done by the hand of the accoucheur subsequent to the extraction of the child.

There was not much blood in the peritoneal cavity, which was carefully cleansed, a gauze drain inserted, and the abdomen only partly closed. The patient was returned to bed in very good condition. Her subsequent history was not entirely uneventful, but was at no time alarming; she had some fever and discomfort, but neither was great. After some time, evidence of wound



DR. WINSLOW'S CASE OF RUPTURE OF UTERUS.

infection was exhibited. An abscess was evacuated, and the cavity packed with gauze, when it healed without further trouble. She left the hospital in about four weeks and returned to her home at Ashland. In about a month she became pregnant again, and began to have unpleasant symptoms, such as pain and dragging sensations, and she came to see me at the expiration of about three months. I thought at that time she was likely to abort, and I understand that she did so shortly afterwards.

Leaving out of consideration the question whether the rupture of the uterus in this case was unavoidable, and whether it would have occurred in the hands of one possessing a greater degree

of skill, I will pass to the consideration of the methods to be employed in the treatment of this very serious injury. Two lines of treatment present themselves to the surgeon when confronted with a rupture of the parturient uterus—first, the suture of the laceration, the case being practically a Caesarian section and secondly, the extirpation of the organ, a Porro operation. I do not think any hard and fast rules can be made in this regard, but each case must be treated on its merits. In every case a laparotomy must be done as soon as possible after the injury, and when the abdomen is open and the uterus exposed, the operator will have to make his choice between the two procedures. If the laceration can be securely sutured and the peritoneal cavity carefully cleansed, I do not see the propriety of depriving the woman of her generative apparatus. If, on the other hand, the tear is so irregular that it cannot be effectively sutured; if the patient is so severely shocked that time is an important factor in the case, or if there is reason to fear an unusual amount of infection, it may be better to remove the uterus. The question of hysterectomy was considered at the time of the operation in this case, and it was thought to be a favorable one for the closure of the laceration by sutures. The result has apparently justified the treatment, and I doubt not that the woman is better satisfied than she would have been if the other line of treatment had been followed.

I am indebted to Mr. J. W. Burch, a student at the University of Maryland, for the very excellent drawing accompaning this report.

SURGERY IN DIABETICS.

By H. A. Fowler, M.D.,

Baltimore, Md.

My attention has been called to the subject of the relation of glycosuria to surgery by a recent emergency case in the service of Dr. Hugh H. Young in a diabetic subject which resulted fatally four weeks after operative interference. This patient reacted from the operation remarkably well, and the post-operative course was satisfactory except for a very small abscess which formed two weeks after the operation. This abscess was opened, free drainage established, and the wound healed without delay by granulation. Four weeks after the operation the patient suddenly developed symptoms of diabetic coma and died within thirty-six hours. The urine in this patient contained 2 per cent. of sugar.

In looking through the recent literature I have found relatively little treating of glycosuria from a surgical standpoint. In

the text-books of surgery the subject is referred to very briefly, and then only in the relation of diabetes to gangrene, so-called diabetic gangrene.

Sternberg, at the recent *Versammlung Deutscher Naturforscher und Aerzte* in Karlsbad, states that there are scarcely 400 operative cases upon diabetes published, and that one-half of these occurred in the preantiseptic and the antiseptic periods.

I have thought it of some interest and of some practical value to bring together the few scattered articles in the recent literature relating to this subject, to summarize the conclusions reached, and to point out the considerations which should govern operations in this class of cases.

When one finds sugar in the urine of a patient requiring surgical interference, the following questions naturally present themselves: (1) What is the relation of the glycosuria to the lesion? (2) What are the limits of operative measures in subjects of glycosuria? (3) What effect does the glycosuria have on the course of disease and traumatism? and (4) What general rules, if any, should govern the preparation and after-treatment of surgical patients with glycosuria?

* * *

RELATION OF GLYCOSURIA TO THE LESION.

Various attempts have been made to distinguish between diabetes mellitus and glycosuria. Verneuil (1884) said: "Today, in the possession of more facts, I have decided to discard absolutely, as a surgeon at all events, the existence of an arbitrary division which does not present, in my opinion, any practical utility. * * * From the surgical point of view, the presence of glucose in the urine, whatever its amount, is always a serious fact."

Tuffier (1888) supports this view: "The simple presence of glucose in the urine has been sufficient to provoke grave complications."

Godlee (1895) writes: "I doubt the possibility of distinguishing between these conditions, and, from the surgeon's point of view, of the necessity of attempting to do so."

Durham and Smith (1892), while admitting the difficulty of making a sharp distinction between diabetes and glycosuria, yet, "in order to place the question upon a reasonable and intelligible basis," they find it "necessary to recognize the fact that glycosuria may result from a surgical lesion." They make the following classification of cases:

(1) Those in which the lesion demanding surgical aid is the actual and direct cause of the appearance of sugar in the urine (glycosuria).

(2) Those in which the sugar in the urine precedes and is not dependent on the surgical lesion (diabetes mellitus).

(a) The lesion and the glycosuria are independent conditions.

(b) The lesion is dependent upon some previous glycosuric condition—gangrene, etc.

König (1896) supports this view. He says: "The French have shown that, often in connection with some infection, a greater or less amount of sugar may appear in the urine, disappearing again after proper surgical treatment of infection, so that not all cases of glycosuria with infection are diabetic. The appearance of sugar in these cases is generally of short duration, lasting either a few hours or days, but rarely persisting. The sugar in many cases appears on a rise of temperature, and it follows upon the rise, and is not the cause of it."

Upon the discovery of sugar in the urine, then, we should find out what relation its appearance bears to the lesion,—whether there were distinct diabetic symptoms preceding, or whether the present symptoms are dependent upon the malady for which the patient is seeking surgical aid. It is convenient to consider next the effect of glycosuria on the disease and the post-operative course in such cases will depend on whether the presence of sugar in the urine depends on the lesion or precedes it. In the first condition the prognosis is much more favorable, and it is for this reason chiefly that this classification of cases is of practical value. When the glycosuria is secondary to the lesion the operation is often followed by a complete disappearance of the sugar from the urine.

As to the etiology in these cases we may make the following division:

(1) Toxic.
  (a) Septic.
  (b) Drugs.
(2) Traumatic.
(3) Reflex.

Phlegman, abscess, carbuncle, erysipelas, gangrene, and ulcerating or inflamed neoplasms have given rise to a glycosuric condition.

In cases of cellulo-cutaneous inflammations, Redard states that he has almost invariably found sugar in the urine. In the majority of cases the duration is two or three days only. The highest amount is 2.29 per cent. In his observations Redard states that the glycosuria was accompanied, almost always, by a transient polyuria, with an increase in the density and the urea.

Durham and Smith report a case of this kind in which they separated pure cultures of staphylococcus pyogenes aureus.

The prognosis is not unfavorable. In a series of fourteen cases, eleven recovered. The presence of sugar does not lead one to make a more guarded prognosis; nor is there much evidence that the glycosuric condition may become habitual. Only one such case has been reported.

Prévost, in 1877, drew attention to the close connection existing between the secretion of sugar and purulent conditions. He

went so far as to diagnose pus somewhere in the body on discovering sugar in the urine. We know now that pus is not a necessary factor in the causation of glycosuria, but cases of abscess accompanied by transient glycosuria are reported in which the sugar disappeared by evacuation of pus and free drainage. The glycosuric condition, however, may persist, as in one case where diabetes followed an abscess connected with a tooth.

That carbuncle is a common complication of diabetes has long been known. However, sugar may appear in the urine for the first time in a patient affected with a carbuncle. To quote Durham and Smith: "It seems not improbable that a considerable number of cases of carbuncle that have been attributed to diabetes should rather be considered as cases of carbuncle with secondary and transitory glycosuria, and this raises the question whether carbuncle is as frequent in diabetes as it is considered to be."

The duration of glycosuria in these cases varies from two or three days to two or three months; the longest period noted is six months. The sugar usually disappears with the carbuncle. It is particularly important in these cases to follow the patient until the sugar has completely disappeared.

Redard states that in cases of erysipelas, particularly when grave, sugar is almost constantly found in the urine. The amount of sugar follows closely the intensity of the erysipelas, decreasing and finally disappearing as the infection subsides. The glycosuria, which is usually transitory, may, as in any of the grave septic conditions, develop into true diabetes. In all probability the sugar in the urine does not influence the course of the infection.

In cases of traumatism sugar is not infrequently found in the urine. It may appear immediately following the trauma, or after an interval of several days. In those cases where it follows immediately the glycosuria is generally transitory, in some cases lasting only a few hours. In the later condition, however, it may persist for months or even become permanent. In this class of cases, therefore, the prognosis should be guarded.

Lydston, in 1897, reported two cases of phimosis and one of stricture associated with glycosuria. In the cases of phimosis, both in children, the diagnosis of diabetes mellitus had been made. After circumcision the symptoms subsided completely and the sugar disappeared from the urine. In the case of stricture there was marked glycosuria, which disappeared after dilatation and had not recurred one year later. In these cases the glycosuria is held to be due to reflex irritation.

The following conclusions are reached by Durham and Smith: (1) Sugar is very common in the urine in appreciable amounts, as the result of toxic (septic) and traumatic lesions.

(2) There is no evidence to prove, and no reason to suppose, that as the result of this secondary glycosuric condition, either

the lesions themselves or operations for those lesions are rendered more severe.

(3) We shall see later on that the previously diabetic are liable to various connections; therefore, we must not, on discovering sugar in the urine, condemn a patient as liable to these complications till a full inquiry has been made into his past history and present condition.

(4) We think, therefore, that we are justified in separating, as far as possible, those cases where the sugar is the result of the lesion for which the patient is seeking advice from those where the lesion occurs in a patient previously glycosuric.

(5) There is no reason to suppose, as many following Verneuil do, that the presence of sugar in the urine necessarily implies a more guarded prognosis.

(6) On discovering sugar in the urine, if this be found to be secondary to the lesion demanding operative treatment, and not to a previously glycosuric habit, there is no contraindication to operation and there is no evidence to show that the result will be any worse than in non-glycosuric patients.

In the second group of cases, those in which the glycosuria precedes the lesion (true diabetes mellitus), we find that the danger of operative interference is considerably increased. While diabetics are not good surgical subjects, being particularly liable to certain serious complications, the opinion seems to be growing that in carefully-selected cases, with due attention to the most rigid asepsis, they are not to be denied surgical aid. Diabetes is, however, per se, a contraindication to operation. What, then, are the limits of operative measures in those cases complicated by diabetes, and what effect does the diabetes have on the disease, the post-operative course, and what complications are to be looked for and avoided?

Operations in diabetes may be divided into two main divisions: (1) Operations that are urgent; (2) operations that are not of immediate necessity. As examples of the former may be mentioned strangulated hernia, hemorrhage, injuries, and acute suppurative appendicitis. A case reported by Fisk (1900) will illustrate this class of cases. A man fifty years of age was taken suddenly with an acute attack of appendicitis. On the following day symptoms of perforation occurred and and operation was decided upon. Ether was given, a large abscess evacuated, and the appendix removed. The wound healed slowly by granulation. the patient made a complete recovery and was living five years after the operation. The patient had had sugar in his urine for years.

In these cases which demand immediate operation, whatever risk there may be on account of the diabetes must be taken. The results in any particular case will depend on a variety of factors, such as the nature of the lesion, gravity of the operation demanded, and the condition of the patient. In general, one may

lay down the following rule: Perform that operation which will require the shortest time and produce the least shock. Ether should be used for general anaesthesia—never chloroform. The after-treatment is the same as for the second group of cases.

Operations that are not of immediate necessity.—This is by far the most important group of cases, and, as might be expected, one finds here the greatest diversity of opinion. There are those who hold that diabetes is contraindication to any surgical interference whatever; while others declare that, with rigid asepsis, operations may be performed upon diabetics with equally as good results as upon non-diabetics. We should expect the truth to lie somewhere between these two extremes.

There are certain considerations which must be kept in mind whenever the question arises as to the advisability of operating on a diabetic patient. These are: (1) The condition of the patient; (2) the value of the lesion, and (3) the gravity of the operation demanded.

The majority of diabetics coming under the care of the surgeon belong to the fat variety, and these are the most favorable surgical subjects. In young patients a trivial operation is not uncommonly followed by a rapid development of coma and death, while in older patients coma develops usually only after severe and prolonged operations. Alcoholics with diabetes are notoriously bad surgical subjects. The indications for operation on these cases must be most urgent to justify surgical interference. In cases of long standing diabetes structural changes have undoubtedly occurred which diminishes resistance and makes the prognosis less favorable.

In regard to the amount of sugar and the effect of anti-diabetic treatment opinions vary greatly. All apparently are agreed, however, that previous anti-diabetic treatment is beneficial and should be instituted in every case before operation. It has a tendency to prevent the development of coma. It is to be remembered, however, that patients in which the sugar, under this treatment, disappeared completely, may develop coma.

The absence of knee-jerks in diabetic patients was thought by Reynier to be of great prognostic significance. For him this sign was sufficient to decide either in favor or against operation. Kausch (1902) states that this is one of the most useful of the general indications. Durham and Smith (1892) are led to conclude "that evidence is required before the condition of the reflex can be considered to be of any prognostic value." Schupfer (1898) supports this view. He found the patellar reflex lost in those cases associated with alcoholism and lues, that there is no correspondence with the sugar output or with the severity of the disease, and is, therefore, of no prognostic value.

As to the nature of the lesion, the results will depend largely on whether or not the operation can be strictly aseptic. Aseptic wounds heal promptly. Infection, when it takes place, is always

from without. The great danger in operations on diabetics is infection. The strictest asepsis is essential. Infection produces constitutional disturbances out of all proportion to the local conditions, and coma is more likely to develop. It is interesting to note that the operations about the mouth do very well, while those about the penis are exceedingly dangerous. The simple operation of circumcision should never be done without first examining the urine for sugar. When diabetes exists the operation should be performed only when the indications are urgent, and then with the utmost precaution as to asepsis.

With regard to the gravity of the operation, in young subjects, as pointed out above, a trivial operation may be followed by coma and death in a very short time. In elderly patients coma is not so likely to develop except after prolonged operations producing great shock. In cases of long-standing diabetes great care should be taken in the selection of cases, as structural changes, dependent upon the diabetes, have taken place which increases the danger of complications. In carefully-selected cases, on the other hand, operations of the greatest magnitude may be expected to do well. The following case reported by Fisk (1900) illustrates this point:

Diabetes Mellitus; Carcinoma of the Breast; Halstes' operation; Recovery.—The patient was a fleshy woman, sixty-one years of age, with a hard nodular mass in right breast. The skin over this tumor was ulcerated for an area of two by two and a-half inches. The urine contained 2.5 per cent. of sugar. Symptoms of diabetes had been present for sometime—time not definitely stated. Without preliminary anti-diabetic treatment ether was administered, and the entire breast, both pectorals with axilliary fat and glands were excised en masse. Recovery was good—union was by first intention. Two weeks later ether was again given, and the wound was covered by Thiersch's skin graft. Two and a half years later a slight recurrence was removed under cocain. Sugar was then present in the urine—amount not noted. Six months later a small ulcer over the lower portion of the cicatrix was removed under primary anesthesia, together with a portion of the rib beneath. At this time there was 2.2 per cent. of sugar in the urine. This patient was living four years after the first operation.

* * *

OPERATIONS FOR DIABETIC GANGRENE.

The relations of the gangrene of the extremities to the glycosuria in subjects of diabetes mellitus has been variously interpreted. The opinion seems to be growing, however, that the gangrene is not wholly dependent upon the diabetic condition, but rather upon associated vascular and nervous changes.

Wallace (1899) goes so far as to conclude that "true diabetic

gangrene does not exist." He would make diabetic gangrene a subdivision of senile gangrene—senile gangrene complicated by diabetes—and points out that, as in senile gangrene, the most constant pathological condition in the diabetic form is arterial degeneration. Wallace concludes, therefore, that the treatment of the two forms should be similar.

Israel attributes spontaneous gangrene to (1) an imperfect access of normal blood (senile); (2) perfect access of normal blood (gangrene following infection), and (3) imperfect access of normal blood (diabetic).

The chief etiological factors of gangrene of the extremities occurring in diabetics are (1) traumitisms, often of very slight extent; (2) arteriosclerosis, and (3) nerve degeneration.

G. B. Smith collected the cases of diabetic and senile gangrene admitted to the surgical wards of Guys Hospital since 1879 in order to compare the different methods of treatment. He makes the following classification:

1. Local expectant antiseptic treatment.
2. Removal of dead structures with cutting through of the tendinous and fascial structures.
3. Amputation close to the gangrenous area, *i. e.,* low amputation.
4. High amputations.
   (a) Below the knee.
   (b) Through or above the knee-joint.

These statistics show that in gangrene of the extremities the high amputation is the only method of treatment likely to give satisfactory results, except in those cases in which two or three toes only are affected and where symptoms of general septic poisoning are absent.

The statistics of Haidenheim, Kuster, and Smith and Durham also show conclusively the necessity for high amputation in these conditions. Wallace believes that the fear of local sloughing is without foundation, and that if the amputation has been high enough to secure healthy blood vessels, the flaps may be expected to heal well.

The general rules governing operations on diabetics have been already referred to under the separate headings. It is only necessary to emphasize the importance of the strictest asepsis, as all infection comes from without.

When possible, patients should be put on antidiabetic treatment before the operation, and the diet should be carefully regulated following the operation.

The patient should be given large doses of sodium bicarbonate just before the administration of the anesthetic, as this aids in preventing the development of coma.

Ether is the anesthetic to be used—never chloroform.

Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

GOUT IN THE UNITED STATES.

Futcher (*Journal American Medical Association,* 1902, October 25) discusses the occurrence of gout in the United States and analyses the 36 cases, which have been admitted to the Johns Hopkins Hospital during the past 13 years. After discussing the rarity of the disease in the United States and the consequent difficulty of obtaining accurate statistics, Futcher analyses the 36 cases, considering hereditary tendencies, the influence of food, alcohol and lead, the nationality, age, sex, social position and occupation, after which he discusses the disturbances of metabolism, the clinical types of the disease, the complications, among which may be mentioned bursitis, pericarditis and parotitis and the means of arriving at a diagnosis. Futcher's summary is as follows:

1. Gout in the United States is undoubtedly more common than is generally supposed.

2. Out of 13,400 medical cases admitted to Dr. Osler's wards in the Johns Hopkins Hospital during a period of 13 years there were 35 gout cases, or 0.24 per cent. of the total number of patients. For the same number of years at St. Bartholomew's Hospital there were 116 gout cases out of a total of 31,100 medical admissions, or 0.37 per cent. of the cases. Thus, among hospital patients gout is only about one-third more frequent in London than in Baltimore.

3. All of the 36 cases were white males. The largest number of cases occurred in the fifth decade. Twenty-seven of the patients were native born Americans.

4. The majority of cases appear to have earned rather than inherited their gout. Alcohol and lead seemed to be the most potent predisposing etiological factors.

5. Thirty-three of the 36 cases had reached the chronic stage before they came under observation. In 17 of the cases tophi were present.

6. Among the more interesting complications may be mentioned 3 cases of gouty bursitis; 1 case of parotitis; 1 of pericarditis; 1 of retrocedent gout with symptoms simulating intestinal obstruction.

7. There was evidence of disease of the kidneys in the majority of the cases. Albuminuria occurred in 27 and hyaline and granular casts in 23 instances.

8. Arterio-sclerosis was present in 23 cases and a mitral systolic murmur in 5.

9. Many gout cases are mistaken for rheumatism. Four of the cases were repeatedly diagnosed as such on the early admissions, the appearance of tophi later revealing their true nature.

10. The series illustrates the great importance of examining the ears and the vicinity of the joints for the presence of tophi in all cases of multiple arthritis.

* * *

SCURVY.

Talley (*Journal American Medical Association*, 1902, Nov. 1) reports a case of scurvy with unusual poverty of the blood. The case was an American working in Cuba, who had lived on an insufficient, poorly prepared dietary for a considerable length of time, in which vegetables and fruits were very scarce and the water very poor. On examination after he had returned to the United States in an almost moribund condition the symptoms that were especially noteworthy were his breathlessness, rapid pulse, complete anorexia, intermittent losing of blood from the gums, obstinate constipation and slight epistaxis. The blood count showed 370,000 red corpuscles, 17 per cent, of hemoglobin and 4,600 white blood corpuscles. The man died shortly and the things of especial interest made out at the autopsy were innumerable hemorrhages beneath the visceral layer of the pericardium, extending in some places for a slight distance into the myocardium and fatty degeneration of various of the organs.

In the paper the author believes that the "anatomical condition taken into consideration with the clinical symptoms appear to confirm the diagnosis of scurvy, the anaemia and fatty degeneration resulting from frequent hemorrhages," but the condition of the blood with its high color index makes it difficult, it seems to us to rule out pernicious anaemia. After a consideration of the condition of the blood in scurvy and a discussion of the three theories of the pathogenesis of scurvy, namely the nutritional (that it is due to a diet wanting in fresh vegetables), the toxic (that it is due to eating tainted food), the bacterial (that it is an infectious disease, although no definite micro-organism is acknowledged) Talley reaches the follwing conclusions:

1. There is no condition of the blood characteristic of scurvy.

2. Gingivitis is not a constant symptom of scurvy.

3. In certain scurvy cases there is a condition of the blood similar to that existing in pernicious anemia, though any definite connection between the two diseases is not demonstrated.

4. The most important element in the causation of scurvy appears to be a diet lacking in vegetables or their ingredients.

Tainted food may produce it, and an exclusive diet of perfectly fresh meat and blood may prevent it.

5. The infectious theory is gaining a strong foothold among the authorities, although no definite micro-organism is acknowledged.

Rogers (*Ibid.*) in discussing some physiological factors involved in the origin of scurvy, the various opinions held as to its etiology and pathology comes to the following conclusions:

1. The direct cause for the appearance or continuance of an attack of scurvy does not depend upon the activity of micro-organisms although the latter may establish conditions favorable to the onset of scurvy or aggravate a case already existing.

2. The direct cause for the appearance or continuance of an attack of scurvy lies in the establishment of the condition known as "lack of oxygen" in the tissues.

3. Those conditions which tend to prevent the formation of acid, *i. e.*, of hydrogen ions (and possibly other products also) in the tissues and tend to increase the store of available alkalinity, *i. e.*, hydroxyl ions, in the blood and lymph, are the conditions most antagonistic to the development of scurvy or its continuance, and those most favorable to its cure.

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TUBERCULOSIS OF THE MYOCARDIUM.

Anders (*Journal American Medical Association*, 1902, November 1) reports a case from his own practice of tuberculosis of the myocardium and discusses at considerable length the literature of the subject. After a consideration of the primary and secondary forms, the relation of age, sex and previous disease to the condition, the sites of the lesions, the three and possibly four varieties, the rarity of ulceration, the means of diagnosis, the various complications (among which may be mentioned hypertrophy and dilation of the heart, thrombi in and compression of the vessels, and tuberculosis elsewhere), the source of infection and the symptoms he believes he is justified in coming to the following conclusions:

1. Tuberculosis of the myocardium is more common than has been supposed.

2. At present writing not more than three pathologic varieties are justifiable.

3. It is practically always secondary to a lesion in some other situation, most commonly in the bronchial or mediastinal glands.

4. Transmission to the heart occurs most frequently by the lymph stream, less often by the blood current, and more rarely still as the result of extension by continuity.

5. Myocardial tuberculosis in a considerable proportion of

cases is secondary to pericardial tuberculosis and the latter to disease of the bronchial glands.

6. The symptomatalogy is extremely variable and indefinite.

7. Diagnosis is excessively difficult, but is probably possible with great care and under favorable circumstances. In addition to the suspicious features that may be present the existence of generalized tuberculosis and pericardial tuberculosis, one or both, are essential to a diagnosis.

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TREATMENT OF TUBERCULOUS GLANDS OF THE NECK.

Freeman (*Journal American Medical Association,* 1902, December 6) discusses the treatment of tuberculous glands of the neck. After discussing briefly the usual history of the disease and the medicinal and hygienic methods of treatment he devotes the larger portion of his article to a consideration of local treatment, discussing first the non-operative, then the operative. The conclusions which he arrives at are as follows:

1. The gravity of tuberculosis of the cervical lymphatics, both as regards local deformity and remote secondary manifestations, is generally underestimated.

2. General treatment, especially hygiene, is of the utmost importance, both in the cure of incipient trouble and in the prevention of relapses following operations on more advanced cases, most recurrences being due to neglect of such measures.

3. Residence at the seashore has long been recognized as of great benefit; but there is reason to believe that a high and dry climate, such as that of Colorado, with its rarefied, stimulating atmosphere and abundant sunshine, possesses superior advantages.

4. A point of extreme importance in local treatment is to abolish sources of infection, in the teeth, tonsils, nose, ear, scalp, etc., and neglect of this is apt to result in failure.

5. Non-operative treatment is often of doubtful utility, except in the beginning of the disease.

6. Pulmonary involvement does not contra-indicate operation, at least in Colorado, except in advanced cases.

7. Curettement is applicable to sinuses, tubercular ulcers of the skin, and where complete removal would be attended by too much risk. In all other instances a thorough operation should be done.

8. The size and shape of the incision should be adapted to the particular case. It should be free enough to permit of thoroughness and safety.

9. The chance of permanent cure following operation is prob-

ably better in Colorado than in lower and less favorable altitudes.

* * *

CRYOGENINE IN THE FEVER OF TUBERCULOUS PATIENTS.

Lumière (*La Presse médicale,* 1902, November 22, p. 1121) has isolated and prepared metabenzaminosemicarbazide which he calls cryogenine. This is a white crystalline powder slightly soluble in water and enjoys peculiar antithermic properties. Dumarest has studied its action in the fever of the tuberculous. The therapeutic dose which varies from 20 centigrams to 1½ grams is without action upon healthy subjects, but among the feverish it brings about a rapid fall of temperature (1° to 2° C.) which reaches its maximum in about two hours' time and some effect is noticeable even the next morning. This defervescent action seems to depend upon the peculiar constitution of the drug more than the quantity administered for it is obtained in small doses and is not always proportional to the doses. After defervescence has been obtained it may be kept up with very small doses for a number of days. Cryogenine is not toxic even after prolonged administration and it possesses no anodyne, analgesic or hypnotic properties, and never provokes chills, sweating, collapse, cyanosis, cardio-vascular or digestive troubles, cutaneous or sensory affections or urinary modifications. It is a pure antithermal agent, particularly in cases of lasting fever such as is met with in tuberculosis. Its effect, however, is not very marked in the fever which accompanies a pure tuberculous intoxication or localized congestions, but these are better treated by others means than antithermal agents. On the other hand secondary inflammatory fevers, the fever of caseation and the hectic fever have been constantly benefited.

Cryogenine is thus, according to Lunière, the drug which is pre-eminently suitable in tuberculous fever. Its most convenient mode of administration is in konceales; the dose is usually 20 centigrams to 1 gram, but the best results are obtained by giving one large dose at the beginning of or a little before a thermic rise and following this by decreasing doses of from 60 to 20 centigrams given every other day at the same hour and continued as long as necessary.

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THE ACTION OF ADRENALIN IN HEMOPTYSIS AND HEMATEMESIS.

Rénon and Loust (*La Presse mèdicale,* 1902, November 29, p. 1149) report their clinical and experimental results in connection with adrenalin. In a case of hemoptysis in tuberculosis, after the administration daily of 10, 15 or 25 drops of the 1 : 1000

solution of adrenalin favorable results were obtained for the time being, but the results were not permanent and the patient died from the hemorrhages; the effect on the arterial pressure was variable and inconstant, sometimes causing it to increase, at other times causing it to decrease, and in a case of Basedow's disease with decreased arterial tension the daily dose of from 10 to 20 drops for a period of ten days brought about no modification of the arterial pressure.

On the mucous membrane of the stomach the action of adrenalin seemed more favorable. In the case of a man who had suffered with severe and repeated hemorrhages of the stomach 50 drops of the solution in divided doses every two hours were given for a period of one week, and the hemorrhages were controlled thereby. The authors did not dare to employ larger doses as animal experiments have gone to show the danger of such doses.

Souqes and Morel (*La Presse mèdicale,* 1902, November 22, p. 1123) have used the hypodermic injections of adrenalin chloride in hemoptysis, giving ½ a milligram, that is, ½ a ccm. of the 1 to 1000 solution. By this method they obtained hemostasis in a relatively short time in four cases. They prefer this dose to a larger one (¾ of 1 milligram) for, while the larger dose does not seem to act much more rapidly it is associated with many untoward symptoms. The action of the adrenalin seems to be by a vaso-constriction. Le Noir employed adrenalin three times with success, in two cases of hemoptysis, using the intratracheal injection of the 1 to 10,000 solution, and in one case of hemorrhoidal bleeding by local applications of the 1 to 1000 solution.

Vaquez stopped 3 hemoptyses by intrapulmonary injections of adrenalin. Bouchard and Claude (*La Presse médicale,* 1902, December 3, p. 1160) report to the French Academy of Sciences the results of their exeperiments. The authors have found that with intramuscular injections, one or two-tenths of a milligram of adrenalin kills a kilogram of animals. When injections are made with small doses a certain immunity may be obtained so that it may require a half milligram per kilogram of animal to produce the toxic effect.

Adrenalin according to the authors brings about an anaemia of the organs, distension of the large veins and pulmonary edema.

PATHOLOGY AND BACTERIOLOGY.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

General Pathology of Tumors. Charles P. White. (*The Lancet,* 1902; *Jour. A. M. A.,* March, 1902).

In these two lectures White reviews the subject of tumors. He thinks the classification based on embryology is unsatisfactory, and gives the following classification based on their histologic types: 1. A class of organ tumors, or organomata, in which we can recognize distinct organs or parts of organs, not arranged, however, to form a body or part of a body, such as dermoids and teratomata. 2. We have a class of tissue-tumors, or histiomata, in which we can recognize distinct tissues, but not arranged among themselves so as to form organs. This includes the connective tissue tumors (desmomata), lymphoid tissue tumors (lymphomata), muscle tumors (myomata), nerve tissue tumors (neuromata), and epithelial tissue tumors (epitheliomata), not including here, however, the malignant types, but rather the adenomas and endothelial growths. 3. We have cystomata or cell tumors, including: (a) tumors of indifferent cells (blastomata); (b) two kinds of tumors of the connective tissue cells, also the lymphoid tissue cells and the muscle cells (sarcomata); (c) the types of epithelial cells (carcinomata). From this classification we arrive at a definition of tumor. It is a mass of cells, tissues or organs, resembling those normally present in the bidy, but arranged atypically. It grows at the expense of the body without subserving any useful purpose therein. With this scheme of classification we can conclude: 1. That every kind of tissue in the body has its representative tissue tumor. 2. Every kind of cell, with the exception of nerve cells, has its representative cell tumor. Cell tumors of nerve cells have not been described, but muscle cells are represented by myosarcoma, cartilage cells by chondro-sarcoma, and the different kinds of epithelial cells by the different kinds of carcinoma, etc. 3. Tumor formation is not an isolated process, but must be considered in its relation with other closely allied processes. The life history of tumors is next taken up. He does not support Cohnheim in recognizing them as originating in rudiments composed of embryonic cells, though that may be the case at times. They may take origin directly from the normal tissues or in the tissues of pre-existing tumors, or inflammatory products, and it is not necessary to suppose that the rudimenta consisted of the same kind of tissue as that of which tumors are composed. The common factor in tumor formation is not to be found in the rudiment from which the tumor originates. Tumors grow mainly, even entirely, by centrifugal growth, that is, by pro-

liferation of their own cells, but it is possible for the areas of origin to be extended by continuity. Centrifugal growth may be either central or peripheral. If the growth is central the growth will be definitely encapsulated; if peripheral the capsule will be more or less indistinct and the tumor will be infiltrating. The views that have been held as regards teratomata are several, but the author does not accept the parthenogenesis theory, or at least considers it unsatisfactory. The growth of tissue tumors takes place exactly as in normal tissues. As regards epithelial histiomata, White considers the connective tissue altogether secondary in importance to the epithelium in the growth. The growth of the cell tumors differs from that of the tissue tumors in that the growing portions consist of cells more or less loosely held together, but not forming definite tissues. These readily penetrate into the interstices of surrounding tissues. Any formed tissues which may be present in cystomata are of secondary, not primary, formation. In most cases tumors continue to increase in size, but may be limited by a change in structure, such as ossification or calcification. Occasionally these tumors may decrease in size or disappear, even in the malignant forms, as has been shown by Sir William H. Bennett. White thinks there is no evidence for the belief that cells of tumors are incapable of functionating. The sebaceous glands of a dermoid secrete sebum, the cells of adenoma or carcinoma of the intestine secrete mucin, and adenomata of the breast sometimes contain a milky fluid. Perhaps the most remarkable physiologic characteristic of tumor cells is the property they have of storing enormous quantities of glycogen; in which they exceed all the normal cells of the body. The question of the presence of glycogen in tumors is briefly considered; its origin and disposal are yet to be worked out. The pathologic changes to which tumors are subject are the same as those to which a normal tissue is liable; various retrogressive processes, mucoid and fatty changes and calcification, necrosis, inflammation, etc. It will be seen that the histiomata and cystomata correspond respectively to simple and malignant types of a clinical classification. According to White, the difference between a simple and a malignant tumor is to be found in the manner in which it grows. In cell tumors the cells form no definite tissues. Tissue tumors, on the other hand, are primary in their formation from the first. He thinks the clinical features of malignant disease are very imperfectly treated in text-books. There seems to be no account taken of the temperature, and the urine and the blood have not received the attention they deserve. We need much more information on these points, especially as regards the excretion of nitrogen. In the second lecture he reviews

certain theories as to the causation of tumors, first describing the cell structure and cell division and remarking that the centrosome and its associated achromatic substance, or archoplasm, have been strangely neglected by pathologists, notwithstanding they form such an important part of the cell. In malignant growths we find a deviation from the typical form of mitosis—asymmetrical mitosis, multipolar mitosis and amitosis or direct division. The endogenous formation of cells used to be thought a common event in carcinoma, though it has been more recently doubted. Personally, White has no doubt that it does occur. The causes of tumor growth are divided by him into extrinsic and intrinsic factors. Among the former he mentions irritants as important, and we must consider the possibility of the existence of a special extrinsic factor such as animal or vegetable parasites. This parasite theory of carcinoma is quite extensively reviewed, but he concludes that it will not explain the production and growth of the primary tumor, nor the different species and the manner in which they breed true. We do not find a carcinoma giving rise to a second sarcoma process, as might be expected were Gaylord and Plummer's views correct. He doubts whether it will explain the metastases. It will not explain the frequency of malignant disease in certain organs or the rarity of it in others, or why children possess such an immunity. He thinks we are justified in saying that malignant growths are not to be explained on the assumption of special extrinsic causal factors. The intrinsic causes are next considered, and the question of the diminution of physiologic resistance is first mentioned. In conclusion he reviews Adams' theory, which is to the fact that the initiation of a tumor is due to the alteration of the tissue tension.

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Diphtheria and the Diphtheria Bacillus in Scarlatina. J. A. Ichabod. (*Arch. f. Kinderheilk.*, Vol. xxxiv, 1902).

The questions which the writer has endeavored to solve are as follows: Are the rods, resembling diphtheria bacilli, which are found in cases of scarlatina, true diphtheria bacilli, or are they pseudo diphtheria bacilli? Secondly, if the rods found in cases of scarlatina are true diphtheria bacilli, are they saprophytes under these conditions, or are they pathogenic, so that cases of this kind may be considered to represent a double infection?

The conclusions of the author are:

1. A complication of scarlatina with diphtheria is observed not only in convalescents from scarlatina, but may occur at the beginning or during the height of the disease.

2. In order to diagnose scarlatina, complicated with diphtheria at the beginning of the disease, the clinical symptoms must coin-

cide with the bacteriological findings; that is to say, the clinical symptoms of diphtheria must be present as well as the diphtheria bacillus.

3. Diphtheria bacilli, obtained from the throats of convalescents from scarlet fever, or during the height of the disease, are virulent for guinea pigs, whereas the organisms obtained early in the disease, although resembling diphtheria bacilli in every way, are only slightly or not at all virulent for guinea pigs.

4. Absence of virulence of the diphtheria bacillus, found early in scarlatina, does not prove that it is not concerned in the condition, or that scarlatina combined with diphtheria does not exist.

5. Besides the cases of scarlatina, combined with diphtheria, Klebs-Löffler bacilli are sometimes found at the beginning of scarlatina, clinical symptoms of diphtheritic angina remaining absent.

These cases run a milder course and terminate more favorably than those in which scarlatina and diphtheria are combined, and this renders it probable that the diphtheria bacillus in these instances plays the rôle of a saprophyte.

6. In order to prevent the spread of diphtheria among those ill with scarlatina, or convalescent, bacteriological examination of the throats of patients should be made before they are admitted to the wards of the section set apart for this disease.

7. All cases of scarlatina, combined with diphtheria, as well as those in which diphtheria occurs at the height of the disease or during convalesence, should be treated with diphtheria antitoxin.

* * *

THE EFFECT OF INJECTION OF MICRO-ORGANISMS INTO THE PORTAL SYSTEM ON THE STERILITY OF THE BILE IN THE GALL-BLADDER. E. S. Carmichael. (*The Journal of Pathology and Bacteriology,* September, 1902).

It is now almost universally accepted that healthy human bile is sterile. Observations of the author on animals has led him to the same conclusions. In diseases affecting the intestinal tract, especially in typhoid fever, the gall-bladder frequently becomes infected. To what extent infection occurs through the blood circulation is still undecided. Sherrington, by subcutaneous and intravenous injection of various micro-organisms into rabbits, mice and other animals, has shown that these micro-organisms are not contained in the bile secreted, though the blood may be teeming with those organisms.

The experiments of the author were carried out under full

anesthesia and with antiseptic precautions, guinea-pigs and rabbits being the animals used.

Three different kinds of micro-organisms were used:

Typhoid bacilli were used in one animal. The twenty-four hours' bouillon culture was injected into the superior mesenteric vein, and in this case the animal remained well on the fourth day. The bile was perfectly sterile, as proved by negative cultivation results.

B. Coli communis was used in three cases. In two of these the animal was killed within twelve hours of inoculation. One of the animals was apparently none the worse for the operation, but in order to avoid any fallacy ensuing from a post-mortem transmigration, it was thought advisable to kill it.

In both of these cases the bile proved to be perfectly sterile. In the third case the animal died from acute peritonitis of the upper abdomen, and from the fact that twelve hours elapsed before the examination of the bile was made, it is possible that the infection of the bile, as proved by the copious growth on inoculation, may have resulted post-mortem.

Streptococci were injected into the superior mesenteric vein of one animal. The animal died in forty-four hours, there being an acute peritonitis due to leakage at the time of operation. The bile examined within three hours of the death of the animal was sterile.

In all the experiments, except one, injection of micro-organisms into the portal circulation, the bile remained sterile.

It is, therefore, probable that infection of the bile from the gastro-intestinal tract does not take place through the portal vein and liver, but rather by means of extension from the intestinal tract itself.

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AN EXPERIMENTAL STUDY OF THE CHEMICAL PRODUCTS OF BACILLUS COLI COMMUNIS AND BACILLUS LACTIS AEROGENES. Leo Rettger. (*Journal of Physiology.* January 1, 1903.)

The colon bacillus used for this work was obtained from the intestinal contents of a patient suffering from pernicious anemia. The B. lactic aerogenes was obtained from the intestine of an infant.

The media used were Dunham's peptone solution, solution of crystallized egg albumen,mixtures of chopped beef and coagulated egg white suspended in water.

The author presents the following summary:

1. Bacillus coli communis and B. lactis aerogenes fail to bring about very marked decomposition in peptone bouillon. On the other hand, an egg mixture undergoes rapid and extensive transformation.

2. Common products of the colon bacillus are indol, skatol, phenols, hydrogen sulphide, mercaptan, tyrosin, leucin and tryptophan. Albumoses and peptone are present in small amount. This fact is contrary to general belief.

3. B. coli communis causes more rapid and more profound decomposition than B. lactis aerogenes. While the former produces its optimum result within two to three weeks, the lactis aerogenes requires eight to ten weeks to bring about comparable results. Indol is a product of both organisms, while the colon bacillus alone produces mercaptan and phenols.

4. When the bacterial digestion progresses beyond a certain period the intermediate products gradually disappear from the mixture.

* * *

A Report on Tuberculin as a Means of Diagnosis. J. D. Madison. (*American Medicine.* Dec. 20, 1902.)

The author concludes that: (1) Patients may react to tuberculin and no evidence of tuberculosis be found at autopsy. (2) A number of cases reviewed seem to demonstrate that completely healed tuberculosis may react. (3) Cases of proved tuberculosis may not react to the maximum doses. (4) The evidence is not conclusive that other diseases than tuberculosis may react to tuberculin. (5) The margin of error of the tuberculin test is considerable, and probably not less than 10 per cent. (6) The maximum dose should be higher than 4 mg., and not more than 10 mg. Small increasing doses are not advisable, as the reaction is not so likely to be distinct on account of the tolerance which may be produced. An initial dose of 3 to 5 mg. followed by the maximum dose is better. (7) The temperature should usually be normal before injections are given. When the temperature is distinctly above normal, a negative result is of no value, as these patients will frequently not respond at all, even to large doses. (8) It seems quite certain that the glycerin extract of tuberculin deteriorates, and a fresh bottle should frequently be opened, care being taken to keep it in a cool, dark place. The 5 per cent. carbolic-acid solution should be made up on the day it is used, if possible. The writer believes that deterioration of tuberculin is the principal factor in producing delayed reaction. (9) It cannot be said that tuberculin injections are entirely without ill effects, but their use among suitable patients is no more dangerous than the use of chloroform and ether for diagnostic purposes, and is quite as justifiable, as an early diagnosis of tuberculosis is of the greatest importance. (10) About 40 per cent. of all female patients admitted to the hospital (Dauvers Insane Hospital) react to tuberculin.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

SECTION OF CLINICAL MEDICINE AND SURGERY.

MEETING HELD NOVEMBER 21, 1902.

Two Cases of Brain Tumor, with Report of the Eye Symptoms—Drs. Chambers and H. Friedenwald.—The first patient was a female, thirty-five years old, with a history of syphilis twelve years ago. Six months before admission to the City Hospital in June, she commenced to have nausea and vomiting, with a dizziness and intense headache. Her sight had also been failing during this time. On examination she was found to have double choked disc and hemiopia on the right side. The field of vision was reduced. With the right eye she could count fingers at two and a-half feet; with the left at three and a-half feet. There was a sensitive area in the left occipital region. The diagnosis was made of tumor, possibly syphilitic, of the left occipital lobe, and mercury and the iodides were accordingly prescribed. No improvement was seen at the end of a month and the patient begged for further treatment. Her intelligence was fairly good at first, but grew progressively worse, so that on the day of operation it was hard to demonstrate the hemiopia.

Dr. Chambers operated on June 22d and found a tumor too large for removal. He therefore drained off a large amount of cerebro-spinal fluid. In twenty-four hours there was great improvement. Intelligence returned and the patient became quite cheerful. The optic neuritis was also diminished. The patient lived until July 25 and suffered no pain during the four weeks after the operation. Before death intracranial pressure increased and caused a nystagmus. There was also right facial paralysis and herpes labialis. The patient died in delirium. The interesting feature of the case is not in the diagnosis nor in the operative procedure, but in the microscopical appearance to be described below.

The second patient was a male, whose mother and others of his kindred had been insane. Five years ago he was troubled with asthenopia and with myopic astigmatism. This was corrected, as was also a marked weakness of accommodation. The patient was very neurotic and was thrown into violent delirium by atropine. His vision was 6-8 or less, never perfect and could not be corrected. In March, 1902, he had severe pains in his right eye which could not be explained. Sodium salicytate caused some improvement, but after a month the pains recurred and were accompanied with headache. After a trip to the country his vision was reduced to 6-12 and 6-15 and he had a typical form of hysterical amblyopia. The fields of vision were reduced to 10° and 15°. The color fields were also reduced. There was definite right optic neuritis, but the left optic nerve was normal and remained so. There was also corneal and facial anesthesia on the right side and the patient said he was anesthetic

on the right side of his body. The ocular movements were good, but the right eyelid closed only partly in blinking. The marked hysteria and an unilateral optic neuritis suggested orbital disease. This view was confirmed by the presence of orbital pain. However, the optic neuritis (right) steadily increased, paralysis of the right rectus came on, and all the other symptoms progressed till the patient's death, on September 15.

The features in the case are (1) association of marked hysteria and hysterical vision with a cerebral tumor; (2) unilateral optic neuritis. Although such cases are reported, they are very rare and usually suggest orbital disease. The explanation is difficult. The neuritis was not of a high degree, but is merely a mild choked disc.

Dr. Chambers: I saw the first patient on June 22, when she had a very definite tender point in the occipital region. The skull was opened by a large horseshoe flap. The dura was not adherent to the bone, although it was thick and adherent to the pia. The large, soft tumor mass lay directly below it.

I saw the second patient in March, 1902, when he complained of pain in the legs, along both sciatic nerves. He probably had syphilis. The knee reflexes were increased and there was no ankle clonus.

Exhibition of Specimens from the Above Cases—Dr. McCleary.—Case 1. The dura was adherent and there was a slight leptomeningitis; no evidence of syphilis was seen. The tumor was an eroding, fungating mass, perforated and spread out over the dura, and extended 5 cm. below the dura, pressing on the middle occipital convolution of the brain, causing a cup-like depression therein. The pia was everywhere present between the tumor and the brain. There was much hemorrhage. Sections showed that the dura was not involved. On the surface of the tumor were a few spicules of bone, and at the edges a good many giant cells arranged in a gridiron pattern, a result of irritation by the gauze drain, which was left in ten days. The tumor is an endothelioma, originating in the endothelium of the subarachnoid spaces, the pia being quite free.

Case 2. The second specimen is a pedunculated tumor, found at the base of the brain on the ventral surface of the pons, evidently starting from the pia. It was not adherent to the dura. The tumor, which measures 12.5 x 10.5 cm., caused a depression 3.5 x 1.5 cm. in the right side of the pons, displacing the anterior lobe of the cerebellum and extending on the middle cerebellar peduncle. The medulla was also displaced and there was pressure on the temporo-sphenoidal lobe. The tumor had a lamellated appearance. Microscopically it shows a connective tissue framework, containing endothelial cells in rows. It was probably an alveolar endothelial tumor of meningeal origin.

Dr. Deetjen exhibited four radiographs, made on two different occasions from the second case, and in each of these a triangular shadow was definitely made out at the point where the tumor was found.

Dr. F. X. Dercum of Philadelphia opened the discussion.

When I saw the second of the above cases he presented he following symptoms complex: Headache, dizziness, epileptiform seizures, once with unconsciousness; pains in the thighs, especially over their anterior portions; symptoms of co-ordination, more marked on the right; the right

side was weaker; there was right-sided facial paresis, involving all the branches of the seventh nerve; the palpebral fissure was larger on the right, hypesthetic in the region of the superior and middle branches of the fifth nerve, hypesthetic of the right arm in its posterior and upper aspects, unilateral optic neuritis, paralysis of the external rectus, absence of Babinski's reflexes, exaggeration of the knee reflexes, the other being normal. Later on taste was impaired on one side and there was indefinite hemianosmia. The interesting features of the case are extensive involvements of the cranial nerves.

I shall briefly report four somewhat similar cases.

The first was a female, forty-one years old, with headache, vomiting, dizziness, seizures, ataxia in the hands and arms, optic neuritis, especially on the right; lateral nystagmus, dilation of the right pupil, paralysis of the superior and external recti, central deafness on the right, hypesthesia in the region of the middle and inferior branches of the right fifth nerve, Babinski's sign and the suborbital reflexes absent.

The second case was a male of twenty-six years, who had headache and vomiting, and had had one seizure. There was slight ataxia of the right extremities, optic neuritis in the left eye and to a slight degree in the right, contraction of the visual fields, paralysis of the right external rectus, hypesthesia in the middle and superior branches of the left fifth nerve, hypesthesia of portions of the right lower extremities, both localized and diffuse; paresis of the left side of the face, knee-jerks normal or absent.

The third case is that of a male, twenty-nine years old, with headache, vomiting, dizziness, seizures, ataxia, weakness on the right side, double optic neuritis, nystagmus, hypesthesia of the superior and middle branches of the left fifth nerve, hypesthesia of part of the right lower extremity, the side opposite to that on which sensation was impaired in the face.

The fourth case was a female of fifty-one years, with headache, vomiting, seizures, ataxia, weakness on the right side, paresis of the right side of the face, hypesthesia of the right fifth nerve, especially in the mouth; transient hemianosmia, transient loss of taste and smell on the right side, no optic neuritis, contraction of visual fields, nystagmus and conjugate deviation to the right, right central deafness, absence of Babinski's and supraorbital reflexes.

The second case was operated on by Dr. Keen recently. The skull was opened in the temporal region and the brain protruded excessively. It was incised and an intracerebral growth was found, extending downward and backward.

The fourth case was also operated on; a tumor evidently of the pons, could be seen and felt, but could not be removed.

The ataxia and nystagmus must be due to pressure on the middle and superior cerebellar peduncles. The hemianosmia and hemianesthesia were due to differences in pressure. In Case 1 the voice became impaired on leaning forward. There was no twitching of the facial muscles in any case, and weakness of the muscles of mastication was present in only one case. In two of my cases there was crossed hypesthesia of the lower extremities, due to the direction of the pressure. In the cases reported

by Dr. Friedenwald the hypesthesia of the leg and face ws on the same side.

To summarize my four cases: in addition to the usual headache, nausea, dizziness and seizures, there was ataxia in all the cases, hypesthesia in all, facial paresis in all, optic neuritis in all, three times unilateral; the vision was affected in all; there were ocular pareses in two, nystagmus in four, hypesthesia of the face in four, of the extremities in three; impairment of taste in two and of smell in two; knee reflexes exaggerated in two, diminished in one, varying in two; central deafness in one, impairment of hearing in three.

The second tumor described by Drs. Chambers and Friedenwald explains the findings in the case exactly. In one of my cases the radiograph was successful. This is the one on which Dr. Keen operated. The shadow was situated like that in Dr. Deetjen's. The prognosis is bad, even with operative treatment, but the surgeon can now reach all parts of the cranium. In one case which I saw, Dr. Keen chiseled the temporal bone and put his finger into the foramen magnum.

Dr. Preston: I saw the second case early in July, 1901. The symptoms were normal at that time. There was a slight right-sided anesthesia, and slight mental and hysterical symptoms. The diagnosis lay between hysteria and brain tumor, although I inclined to the former.

In a case which occurred at the City Hospital five years ago, there was headache, a tendency to fall to the right, nausea and vomiting, slight mental symptoms, and hypesthesia of the fifth nerve. The diagnosis was made of ataxia and the involvement of the fifth nerve of a tumor pressing on the cerebellar peduncles, the pons and the exit of the third nerve. The post-mortem confirms the diagnosis.

It seems to me that operations are only justifiable (1) if there be localizing symptoms; (2) for relief of pain and improvement of eyesight.

Dr. H. M. Thomas: The unilateral optic neuritis, which is so difficult to explain, usually, other things being equal, points to the presence of a tumor on the same side.

I should like to ask Dr. Dercum to explain the sensory disturbances on the same side as that of the tumor. In patients under my care who had double optic neuritis and central deafness, it would have been great comfort if we could have relieved at least the blindness. I should like to see an operation devised for the relief of intracranial pressure, but avoiding the hernia cerebri, which has been present in so many of my cases.

Dr. Cushing: Multiple paralyses of the cranial nerves are not uncommon. (See Bastian, *British Medical Journal,* 1893.) In one of my cases there was parayysis of the third, fourth, sixth, seventh, eighth and twelfth nerves on the right, as well as of all the muscles controlled by the fifth on the right side. Diagnosis was made of a tumor near the Gasserian ganglion. The growth was found at operation and easily removed. Two weeks later the lower part of the tumor was removed. The pain is again returning in the face and the patient is blind in one eye.

We have two groups of symptoms in cases of brain tumor—(a) the great triad; (b) the localizing superstructure of symptoms. Dr. Fitz

has recently said that mere prolongation of life by surgical intervention is not justifiable, unless there be relief of symptoms. In the first case reported by Dr. Friedenwald there was certainly an advantage in operation. If there be no localizing symptoms, operation may still be justifiable, the opening being made preferably in the cerebellar region, because death is most often due to pressure on the medulla and will be less likely to occur if the opening is in that vicinity. The operation should be undertaken to free the patient from his symptoms. Wound may be closed without drainage. Sanger of Hamburg reports a large number of cases from a neurological standpoint and advocates palliative operations.

Dr. Dercum said, in conclusion, that of the cases which were operated on and in which no tumor was found, some were relieved, and others, perhaps a larger number, went from bad to worse; further, that the contraction of the visual field was probably not a hysterical manifestation, but due to pressure on the second nerve.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD DECEMBER 1, 1902.

Certain Forms of Cyanosis with Polycythemia—Dr. Osler.—Cyanosis is a common symptom. It is seen (1) in a large group of heart cases: (a) Congenital heart disease; (b) acquired heart disease, especially in mitral cases. In this form the cyanosis may be long continued; one case in this hospital had cyanosis over the entire body over three years.

(2) In pulmonary diseases. Here cyanosis is comparatively rare. Sometimes seen in tuberculosis, but most marked in emphysema. Only in emphysema and congenital heart disease will a patient be able to walk into the doctor's office and frighten him by the intense cyanosis of his face.

(3) In Raynaud's disease. Here it is due to vaso motor disturbances and is localized in the hands and feet.

(4) In rare cases of scleroderma, or in certain cases with obscure etiology. In one case of abscess of liver seen here there was marked cyanosis for weeks, of such a degree that the impression of the hand remained upon the body for several minutes.

Two recent cases which have come under my observation belong to this last group. The first is that of a male who has been admitted to this hospital four times, giving the same history on each occasion. He complained of persistent nausea, and vomiting and constipation. He presents a remarkable degree of cyanosis of the lips, chest and hands. The condition of the blood is striking. On May 20th the blood-count was 10,200,000 red corpuscles, haemoglobin 115, no especial change in the leucocytes. The lungs, heart and kidneys are normal. The blood pressure is 142.

The second case is that of a male whose auppearance is most striking, especially on a cold day. His face is livid and his ears indigo-blue.

The hands are constantly cyanosed. His blood-count also shows 10,000,000 red corpuscles. His heart and lungs are negative. There is a trace of albumin and a few casts in the urine. His general condition is good, and he is only short of breath on misty or cold days.

Nothing is known as to the etiology of this type of cases. Cabot has reported two, and Saundby of London has likewise seen two cases. The high blood-count is of interest. It sometimes occurs in stomach diseases, where there is much nausea and vomiting. In the second case described there are no gastric symptoms whatever, and in the first case the cyanosis persists even when the stomach is at rest.

An Interesting Case of Paraplegia with Recklinghausen's Disease—Dr. Thomas.—This case is reported at Dr. Osler's request on account of the nervous manifestations. The patient is a female, fifty-one years old, who has always lived on a farm in West Virginia. No similar condition has occurred in any other member of the family. The past history is unimportant. The patient has always noted certain tumors on her body; one on the back of her right ear she remembered as a child. She also remembers to have seen pigment spots on her skin. Five or six years ago these became so numerous that she showed them to a doctor. The last tumors to appear were on the face. Her present illness began five years ago, with a stinging pain in one ankle, making her think that her clothes were on fire. The pain occurred at short intervals, gradually extended up the leg, involving the lower back, then went down into the other leg. Two years ago she commenced to have similar pains in the arms and at the same time began to drag one foot. Gradually it became hard for her to get about, and for the past year she has been confined to bed or to a reclining chair. During the last three months she has been unable to move herself, and her arms have become so weak that she cannot arrange her hair or knit. From the first there has been jerking in the muscles, and at times, ringing in the ears. Six months ago dysphazia came on and her voice became thick and nasal. There were no bladder symptoms at first, but for the past month she has been catheterized daily. The patient complains of pains and stiffness in the body.

On examination the entire body and extremities are found covered with a great number of tumors, varying in size from the smallest papule to that of a large cherry. There are also many pigmented areas and certain bluish spots, which seem to indicate that new tumors are to be formed at their site.

On consulting the monograph of Alexis Thompson on "Neuro-fibromato," we find that this case belongs in the group of false neuromato, among the diffuse overgrowths, and is to be regarded as belonging to the variety "Cutaneous neurofibromato (*Molluscum fibrosum*)." Associated with the cutaneous growths are certain subjective sensory symptoms. The cranial nerves are negative until we reach the tongue, where fibrillary tremors are seen. The muscles of the shoulder girdle are affected, as well as those of the arm, and there is evidently a condition of muscular atrophy in the upper extremities. The legs are paralyzed up to and including the hip, except that the patient can move the toes of the right foot, and can abduct the great toe of the left foot. The ankles are flaccid. There

is great atrophy of the legs. The deep reflexes of the arms are retained, while those of the legs are lost. Electrical reactions are good except in the hand; in the legs there is only a slight response in the muscles which are still active. Sensation is unimpaired except over the tumors. The eyes are uninvolved. We have, then, a symptom-complex including muscular atrophy, loss of certain deep reflexes, subjective sensory disturbances, with a retention of all objective sensory activity.

The literature on the subject has been well summed up by Adrian, in the *Beitraege zu klin. Chirurgie,* 1901, p. 1. Adrian says that the nervous symptoms accompanying neuro-fibromato are of many kinds, but that they are all comparatively rare, subjective symptoms occurring most frequently. Paralyses are rare. The process may be due to a neuroma situated outside the dura and pressing on the cord, producing symptoms of paralysis similar to those in Pott's disease. In the last number of the *Archiv fuer Psychiatrie* there is a description of neuro-fibromatosis of the central nervous system.

No case has been reported exactly corresponding to the one here presented. Neuromato are usually situated on sensory nerves, but rarely choose them alone. It is very rare to have motor nerves affected alone. In one case reported there was gliomatosis of the cord associated with neuro fibromato. One possibility is that the blood-vessels have been affected and that the pressure on them has cut off the nutrition of the cells in the anterior horn, thus causing great atrophy in the latter. Every nerve from the cord may be involved. In this case the lesion seems to be extending upward.

Dr. Osler: The failure of mental strength is a characteristic which we have seen in this as well as in two previous cases.

Rectal Surgery.—Dr. Ball exhibited with a stereopticon sixty pictures chosen from the series of three hundred with which his father had illustrated his Lane lectures at San Francisco. The cases had been photographed with stereoscopic lenses, and from the photographs thus made drawings were made by artists.

The slides used in this lecture were made from the drawings. The illustrations covered the anatomy and pathology of the rectum, as well as several of the operative procedures used by Mr. Ball.

The Clinical Value of Blood-Pressure Observations in Regulating Stimulation in Sick Children—Dr. Henry Cook.—Hitherto, variations in blood-pressure have been indicated by the expressions "rather better" or "distinctly worse." Especially in pediatrics such expressions give little idea as to the state of the arterial pressure. The principle now advocated is the determination of this pressure by accurate instruments. The instrument is a modification of Dr. Cushing's instrument, which is, in turn, adapted from the instrument used at Riva Rocci's clinic. A continuous column of air passes from the bulb through a tube into the band which surrounds the arm or leg of the patient and connects with a mercury manometer. The finger is kept on the radial pulse distal to the band, the bulb is compressed and the point is determined at which the pulse just disappears. After a little practice the error is not more than 3 mm. of mercury in children, and 10 to 15 in adults.

The observations were made at the Thoms Wilson Sanitarium during the past summer, all determinations being recorded on graphic charts. The cases included marasmus, rickets, pneumonia and diarrhea. The normal blood pressure varies within certain limits, but in general averages about as follows: During the first month 50 mm.; from two to six months 75 mm.; from six to eighteen months 75-95 mm. During the third year up to 105 mm., and not over 115 mm. at any period of childhood. After a meal of 5 to 8 oz. of milk, a physiological rise of 10 to 15 mm. has often been observed. Excitement also causes a rise in pressure, but in children who need stimulants such factors have little influence. It was noticed that the lowest pressure during twenty-four hours was between 3 and 4 A. M., confirming the generally accepted idea that this is the period of least resistance.

The object of the blood-pressure determination was to learn whether the child was getting too much stimulation or not enough. The main stimulants were whiskey, strychnin (gr. 1-400 to 1-200) and digitalin, the latter two being given hypodermically. Response to stimulation by strychnin was indicated by a rise of 10 to 20 mm. in twenty minutes, this period being prolonged in bad cases. Digitalin caused a higher rise, often 40 mm., beginning in ten minutes and lasting sometimes three hours. Five to ten drops of whiskey repeated frequently gave a steady rise in pressure and apparently had some food value as well. Strychnin and digitalin were reserved until after whiskey had been tried and only so much of them used as was absolutely necessary, digitalin being tried first and followed by strychnin. Where both were needed the outlook was generally bad. In certain cases in high pressure digitalin was used and found to steady the pulse without raising the blood pressure further. Salt infusion had no effect, being surpassed in this respect by hot mustard baths.

By keeping a graphic chart the doctor was able to retire at night with a considerable feeling of security. The night nurse took the reading and gave or withheld the stimulant according to the condition of the blood pressure, and called the physician only when there was some marked indication. The morning visit of the physician and the orders for stimulation then given became much more intelligent by thus being able to consult the graphic chart.

My instrument is being made for me by Eimer & Amend, of New York.

Some Observations on Blood-Pressure in Morbid Conditions of Adults—Dr. Briggs.—Low blood-pressure is to be seen in toxic conditions, such as typhoid, in hemorrhagic conditions and in traumatic cases. We have tried to determine the effect of stimulation and to record the result by observation in the three types of cases. To illustrate how useful such a determination may be in an obscure case, the case may be cited of a woman who was brought in comatose; her arteries were sclerotic, reflexes were absent, and urine was of a low specific gravity and contained albumin. Venesection was done because the blood-pressure was found to be over 350 mm. of the mercury. This lowered the pressume temporarily. At the autopsy cerebral haemorrhage was found.

(1) Alcohol. This is the most variable of the stimulants in its effect

on the blood-pressure. A half or one ounce of whiskey during typhoid fever will raise the blood-pressure for not more than half an hour. In a few cases alcohol gave a temporary fall of pressure. On the whole the observations seem to show that the temporary rise of pressure due to the administration of alcohol may be due to a gastric reflex, and not to any real effect on the circulation. In order to test this, a typhoid patient was given tincture of capsicum and a temporary rise of pressure was observed exactly similar to that produced later in the day by an ordinary dose of whiskey.

(2) Strychnin causes much more lasting effects, in doses of 1-60 to 1-10 of a grain. The rise in pressure is not so rapid, but is more lasting, and the general condition improves at the same time. When a great deal of strychnin is being given as a routine, the individul doses have little effect. but this may be produced again by omitting several doses. Frequently in traumatic cases up to 1-20 or 1-10 grain may be given. The rise of pressure thus produced may be kept up later by smaller doses. This method is far better than to give strychnin as a routine throughout condition of low pressure. No effect was observed with strychnin (a) when the ptient was moribund, *i. e.,* when the circulatory apparatus was breaking down; (b) in cases not needing stimulation; (c) when given as a routine, the individual doses merely maintaining the pressure.

(3) Digitalin stands midway between alcohol and strychnin. It produces a result more rapidly, but its effect lasts for a shorter time. Many cases, however, will respond to digitalin that will not respond to strychnin. The combination is very often most effective. The only limit of the dose is that quantity which will give the best effect, and this is judged by the graphic pressure chart. It is not advised that 1-4 gr. be given if 1-20 fails, but to begin with a sufficient large dose to produce a real effect.

(4) Saline infusions have but little effect upon the pressure whether absorption be rapid or slow. An infusion given so slowly as to produce no peripheral stimulation, due to the temperature of the fluid, causes no rise. If there be a hemorrhage the infusion helps to replace the fluid, not to raise the pressure. The infusion produces no rise in cases of toxemia. In traumatic cases the peripheral irritation may even depress the circulation. Blood pressure is only one factor in determining the condition of a patient, but it is a measurable one.

Dr. Crile: Granted that shock is exhaustion of the vaso-motor center in the medulla, if both vagi and accelerantes are cut and strychnin then given, there is a great rise in blood pressure, but it may later fall to a lower level, and the animal into a worse condition of shock than before. The internal stimulation of the vaso-motor center by strychnin and its external stimulation by trauma or operation are alike. This means that in extreme cases of pure shock we are really, by giving strychnin, causing a greater shock and weakening at the expense of the potential energy of the vaso-motor center. In conditions of deepest shock I have seen no good following the use of strychnin. In such cases peripheral stimulation by adrenalin will alone raise the pressure. In one case a dog whose pressure had fallen to 30 mm. was revived with adrenalin, and in

another case by the use of adrenalin a headless dog was kept alive for ten hours.

(N. B.—The remarks of Dr. Briggs and those of Dr. Crile can be more readily reconciled when one remembers that the observations of the former refer to the maximum or systolic arterial pressure, and took no account of the minimum or diastolic pressure. Dr. Crile's observations, on the other hand, refer to the mean blood pressure.)

Dr. Cushing: On the surgical side there has been a long-felt need of a definite knowledge of the blood pressure. Even Dr. Cook's apparatus leaves much to be desired, for physiologists have shown that this form of instrument is not entirely accurate. At Riva Rocci's clinic blood-pressure observations are made at the same time as those of the temperature and pulse. What we need is a knowledge, not of the pressure at any one time, but of the variations in pressure.

Book Reviews.

HEMMETER: DISEASES OF THE INTESTINES. Their Special Pathology, Diagnosis, and Treatment. With Sections on Anatomy and Physiology, Microscopic and Chemic Examination of the Intestinal Contents, Secretions, Feces, and Urine, Intestinal Bacteria and Parasites, Surgery of the Intestines, Dietetics, Diseases of the Rectum, etc. By John C. Hemmeter, M.D., Philos. D., Professor in the Medical Department of the University of Maryland; Consultant to the University, and Director of the Clinical Laboratory, etc. In two volumes. Volume I—Anatomy, Physiology, Intestinal Bacteria, Methods of Diagnosis, Therapy and Materia Medica of Intestinal Diseases: Diarrhea, Constipation, Enteralgia and Enterodynia, Meteorism, Dystrypsia, Enteritis, Colitis, Dysentery, Intestinal Ulcers, Intestinal Neoplasms, etc. With many original illustrations, some of which are in colors. Large octavo, 740 pages. Price $5 per volume. Philadelphia: P. Blakiston's Son & Co. 1901.

This large work, in two volumes, contains practically everything of value in the domain of enterology, and almost the entire modern literature upon the subject has been gone over and all important contributions incorporated in the text of the work. The book is taken up most systematically, and begins with a careful consideration of the anatomy, histology, physiology, bacteriology, pathology of the intestines and the physical methods of diagnosis; after which comes a chapter on the dietetics, therapy, and materia medica of intestinal diseases. This is followed by the intestinal clinic, which takes up half the first volume and all the second, and in which all the diseases of the intestines are exhaustively considered. The book is well printed, well illustrated and fairly well indexed, and should be of real help to the student and practitioner of medicine. B.

THE DISEASES OF INFANCY AND CHILDHOOD. By L. Emmett Holt. Second edition, revised and enlarged. New York: D. Appleton & Co.; Baltimore: Medical & Standard Book Co.

We have always regarded Holt's text-book on diseases of children as one of the best works on the subject. The second edition shows the same ad-

mirable arrangement as the first, with comparatively few changes. The value of pathology in the correct appreciation of symptoms and diagnosis is recognized. Drawings and photographs of morbid conditions are introduced rather freely. The chapter on infant-feeding has been enlarged, and the general directions for home modification and percentage-feeding are discussed in detail. Holt continues to be a great advocate of laboratory-feeding, although recognizing its limitations. The article on Diseases of the Digestive System is well illustrated with drawings of pathological specimens, and the bacteriology is fully discussed.

The general appearance of the book is very inviting, and we know of none which would be of greater advantage to the student. H.

Gynecology, Obstetrics, and the Menopause. By A. H. P. Leuf, M.D., Philadelphia: *The Medical Council.* 1902.

This little book consists of a reissue of three series of papers, with some editorials and paragraphs, which formerly appeared in the *Medical Council.* To quote from the preface, the aim of the book in the gynecological division "has been to encourage the practitioner to do much of the work that he now sends to the specialist," while the obstetric series "was undertaken mainly to encourage a greater use of common sense in this department of medicine."

Another book with somewhat the same object in view is "A Physician's Practical Gynecology," by W. O. Henry, M.D. (The Review Press, Lincoln, Neb., 1902). The objects of this little book are:

"1st. To present the essentials of gynecology in a brief, concise, and clear manner to medical students.

"2d. To give the general practitioner a safe and practical guide for the diagnosis and treatment of the ordinary gynecological cases he will meet.

"3d. To help the physician to quickly recognize those cases which demand the early attention of the specialist, so that they may receive the benefits offered by modern gynecology."

A Text-Book of Pathology and Pathological Anatomy. By Dr. Hans Schmaus. Translated from the sixth German edition by A. E. Thayer, M.D. Edited, with additions, by James Ewing, M.D.

The increase in text-books upon pathology has come especially within the last decade, and the hold that the subject has upon students and practitioners of medicine is shown by the variety of published works upon pathology and the number of new editions that have appeared.

The volume before us has attained great popularity in Germany, but we doubt very much if it will replace some of the works on pathology which have appeared recently. The division of the work into general and special pathology is an arrangement which is favored by modern teachers. While brevity and compactness is always desirable, it should not be carried to such an extent as to render the interpretation vague. The article on tumors covers the ground in a rather superficial manner.

The numerous plates are very well executed, and the clear print makes the book very easily read. H.

MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

Associate Editors:

THOMAS R. BROWN, M.D. | HUGH H YOUNG, M.D.
ROBERT REULING, M.D. | JOSE L. HIRSH, M.D.

BALTIMORE, FEBRUARY, 1903

THE PLAGUE CONFERENCE.

THE ostrich policy of California in respect to bubonic plague has at last been abandoned. The representative of that State at the conference in Washington on January 19 brought the assurances of Governor Pardee and of the commercial bodies that the existence of plague is recognized, and that all interests are agreed that the disease must be put out. Besides California, eighteen States were represented at the conference, and while the conference manifested a spirit of moderation toward the commercial interests of California, it was unsparing in its denunciation of the State Board of Health of California.

The Surgeon-General, reporting upon his own recent visit to San Francisco, said that Mayor Eugene Schmitz of San Francisco had confessed in the presence of witnesses that plague is present, and promised that every effort will be put forth to eradicate the disease. But the mayor's message to the council had been delivered after the date of General Wyman's visit, and in this message Mr. Schmitz reiterated his former views concerning the plague scare.

The Surgeon-General also presented the report of Surgeon Glennan upon the inspection of places outside San Francisco. The California delegates undertook to describe these inspections in which he was a participant. It then became painfully apparent that the inspections were most unsatisfactory in method, however earnest they may have been in purpose.

The conference was advised that the city Board of Health, which up to January 8 had maintained the truth and defended the city under erroneous difficulties, had been reorganized into consonance with the hostile views of the mayor.

It was pointed out that among the health officials of the State were three employes of the great corporation which has furnished most of the brains and power of the conspiracy of concealment, and that another employe of this corporation is slated to succeed Dr. O'Brien as city health officer.

The California delegate proposed to place the whole work under the direction of the United States Public Health Service, California furnishing money and subordinate officials. Undoubtedly plague can be put out in this way, but such a surrender was not expected of California. Surely that State has men who can take the lead in such an undertaking, can command respect and confidence both at home and abroad, and can preserve the credit of Cali-

fornia after the plague has been eliminated. The program proposed by the California delegate will place the United States Public Health Service in a position of undesirable pre-eminence over the State and city boards of health, and, when the plague is over, will leave the city Board of Health of San Francisco seriously impaired in the esteem of outside health officials, and the credit of the State Board of Health will not have been re-established.

THE DEBT OF THE COUNTRY TO DR. WALTER REED.

Senator Martin of Virginia has introduced a bill in the United States Senate providing a pension of $200 a month for the widow of Major Walter Reed. Reed was a benefactor of the human race. His services in the cause of preventive medicine were beyond all price. Their pecuniary value to a single one of the United States for a single year would pay the proposed pension for twenty years. The saving of an ordinary year would do this much. If the cost of a yellow-fever epidemic were considered, the proposed pension would sink to insignificance. The cost of yellow fever to Louisiana in 1878 was $15,000,000 and 4056 lives.

But for the work of Reed and his associates at Havana the isthmian canal project would yet have been beyond a reasonable hope of realization. To this stupendous undertaking the country is now committed, and it is not improbable that unless the practical measures which Gorgas has worked out upon the principles stated by Reed, Carroll, Lazear, and Agramoute are put into practice in the first year of that work, the second year's work may be postponed indefinitely.

THE PROPHYLAXIS OF VENEREAL DISEASE.

Among the discussions in the Conference of State and Provincial Boards of Health at New Haven in October one of the most interesting attended the preparation of an official list of "communicable diseases dangerous to public health." In making such a list the conference kept clearly in mind the somewhat restrictive language of the laws on infectious diseases, and the list was expected to include those diseases about which there is such definite knowledge as may be turned to practical account by public health officials. When syphilis and gonorrhea were reached there was a significant silence, broken at length by the suggestion that since the conference was unable to propose practical methods of restricting the spread of syphilis or gonorrhea, the recognition of either of these diseases as lying within the official domain seemed of doubtful propriety.

The discussion was exceedingly brief, but the view prevailed that the venereal diseases lay upon public health officials responsibilities which are not less heavy because they are undefined, and that such responsibilities should be confessed notwithstanding official unreadiness to deal with them. When the sense of the conference was ascertained there was but one vote against the admission of gonorrhea and syphilis to the official list of communicable diseases dangerous to public health. Applause broke out. No

other act of the conference caused a demonstration of that sort. It seemed as if the conference had a glad surprise.

At a recent meeting of the Harvard Medical Society of New York city, Drs. Follen Cabot, Robert Dawbarn, and John Huddleston discussed the prophylaxis of gonorrhea and syphilis, the subject having been brought up by Dr. Cabot's presentation of some cards of instruction to venereal patients designed for hospital and dispensary use. The discussion was brought to an end by a motion to send samples of Dr. Cabot's instructions to the New York City Board of Health, with a recommendation that similar instructions should be issued under the authority of the Board of Health.

Dr. Cabot's rules are simple, plainly expressed, cover all essential points, and are brief enough to be printed upon a surface no larger than a postal card. Very probably many venereal patients would throw printed instructions away at the first opportunity, but a single reading of the rules would fix the lesson of prophylaxis more completely than the most careful verbal instructions of a physician.

THE ISTHMIAN CANAL PROJECT.

Gen. Leonard Wood is quoted as saying that the only serious problem in the construction of the isthmian canal is that of sanitation. This work will afford a splendid opportunity for demonstrating upon a large scale and in a striking manner the practical value of the modern practice of preventive medicine. A number of medical societies have lately expressed their belief that the services of skilled hygienists should be engaged in this great undertaking. The most forcible expression upon this matter which has so far appeared is that of the American Association for the Advancement of Science, presented by Dr. Wm. H. Welch on January 2, 1903. These resolutions say in part: "The measures for the restraint of these diseases require expert knowledge, based upon practical familiarity with tropical diseases, experience in the application of these measures, and large authority in their administration. The mere employment of a sanitary expert will not be likely to secure the desired results."

These words point out the probable futility of any half-hearted recognition of the offerings of practical hygiene toward this especial work. The medical profession should see that the sanitary service engaged in the canal works is fully adequate in *personnel,* equipment, and authority, and if it is in any respect too feeble to make good the anticipated results, we should be ready to indicate the probabilities of failure.

Our country is rich enough, possibly, in men and means to cut a waterway between the oceans in spite of yellow fever and malaria, and we are shrewd enough, perhaps, to earn a profit on an unnecessary expenditure of both money and life. The abandoned project was characterized by unparalleled waste of money and by frightful and uncontrollable loss of life.

We need not fear that our own undertaking will be attended by scandalous misuse of funds; but in the light of the younger day economy of human life seems, if not a condition of success, a paramount obligation of a great and enlightened people.

Medical Items.

Dr. Adolph Lorenz sailed on the Celtic for Liverpool on December 31.

Dr. Wm. Osler attended the 100th anniversary of the New Haven Medical Society on January 5.

The Pennsylvania legislature will be asked for $300,000 to enlarge and improve the Free Hospital for Poor Consumptives at White Haven.

Dr. John W. Hignutt died at his home in Denton, Md., on January 12, 1903, at the age of seventy-three years. Dr. Hignutt was a graduate of Jefferson Medical College, Philadelphia. He retired from practice several years ago.

The death-rate of Baltimore has somewhat increased in the last few weeks. An epidemic of measles and the coal famine are said to be partly responsible for the rise of the city's mortality.

In Toledo, Ohio, the coal famine has reached a point of such acuteness that the dealers will only sell coal to those who present physicians' certificates that there is sickness in the household of the humble petitioner for coal.

Rabies is said to no longer exist in England or Australia. It has been completely suppressed by strict regulations concerning the care of dogs. Every dog brought into the country is quarantined for several days under the observation of experts.

The physicians of Cecil county are working hard for the establishment of a county hospital at Elkton. A public meeting was held at Elkton on December 17. Drs. Chas. M. Ellis, Howard Bratton, John H. Jamar, and George S. Dare are among the incorporators.

The New York Academy of Medicine recently passed resolutions recommending that the medical officers of the isthmian canal shall have ample powers to execute practical sanitary measures at the canal works, and that a sanitarian shall be a member of the commission.

On January 1 all the physicians in Munich ceased making reports of sickness to the city health office. The municipality refused to supply postage for the reports. The physicians announce that they are willing to resume the reports whenever the city is willing to reimburse them for postage.

The Temple of Esculapius in the island of Cos was recently discovered by Dr. Rudolph Hertzog of Tubingen. The temple is about 100 feet long by 45 feet wide. It was built of marble. Many interesting inscriptions have been found, and part of a bas-relief representing Hygeia with a large snake.

The business of insuring the lives of children is about to be attacked in the Pennsylvania legislature. John and Emma Williams were recently sent to prison to await the action of the grand jury on a charge of poisoning their two children for the sake of insurance money. Other suspicious cases have occurred, and Insurance Commissioner Durham has taken the matter up.

Dr. Robt. H. Goldsmith died suddenly at his home in Baltimore on January 13 of heart disease. Dr. Goldsmith was born in Baltimore February 26, 1832. He graduated at the University of Maryland in 1852, and spent the earlier years of his professional life in Mississippi. He returned to Baltimore soon after the close of the Civil War, and was engaged in the practice of medicine up to the time of his death. A widow and three sons survive him.

At the annual meeting of the board of governors of the Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore, the medical executive committee, consisting of Drs. Herbert Harlan, Hiram Woods, and F. M. Chisolm, was reappointed, with Dr. Herbert Harlan as surgeon-in-chief. Dr. Julian J. Chisolm, who founded the hospital in 1877 and for twenty-two years was its executive surgeon, retired in 1899. Since his retirement the medical management has been continued by this executive committee.

The Southern Railway authorizes a rate of one fare for the round trip to persons attending the meeting of the American Medical Association in New Orleans in May. Tickets will be on sale from May 1 to 4, inclusive, and will be good for a continuous passage in each direction for ten days from the date of sale. Tickets can be extended for a longer period provided they are deposited by the original purchaser with the special agent at New Orleans not later than May 12, 1803, and a fee of fifty cents is paid at the time of deposit, when the final limit will be extended to a date not later than May 30, 1903.

Mr. Henry Phipps of Philadelphia proposes to devote $1,000,000 to the foundation of a special hospital for consumptives to be built in the city of Philadelphia. Mr. Phipps acquired great wealth in the steel business, and, looking about for some worthy manner of investing a large sum for the benefit of his fellow-men, was referred to Dr. Lawrence Flick. The hospital will be erected in the crowded city, not in the suburbs. That, at least, is the proposition. Possibly the entire project may have to be realized in another city, for Pennsylvania has a law forbidding the erection of hospitals in built-up portions of cities. The gentleman who introduced and secured the passage of this law, Mr. John H. Fow, says that his measure is just as good for the public at large as the project of Mr. Phipps, and that he will oppose its repeal. A bill for the repeal of this law has been introduced into the Pennsylvania legislature, and unless it passes Dr. Flick says that Mr. Phipps will transfer the whole project to the city of New York.

Smallpox has been more active in Maryland during the past two months. Snow Hill, Worcester county, became infected through the visit of a negro from Wilmington about the middle of November. Since the first of December some thirty-five cases occurred in Snow Hill. A pesthouse was promptly built, and all cases were treated there. The outbreak was quickly subdued, and by the middle of January was over. A white man in Stockton became infected in Snow Hill, and from his case two others originated in Stockton. On New Year's Day Berlin, also in Worcester county, got smallpox for lack of fifty cents. Berlin had the money, but spent it on quarantine. A child of ten was unvaccinated. She got smallpox. The town then stopped her quarantine and vaccinated the remainder of the family. One more case occurred by strict regulations concerning the care of in the house. A fatal case occurred in Baltimore county. The outbreak in Harford county was concluded with two cases. Eight cases have ocurred in Allegany county, and one in Baltimore.

Plague appeared at Mazatlan, Mexico, about December 15. In two weeks it killed seventy-two persons and created a panic among the population. Mazatlan is on the Pacific, and has no railroad communication with the outside world. Plague was later reported at Guaymas, and this report gave rise to considerable alarm, for Guaymas has railroad connections with the United States. Fortunately, the report of plague at this place proved unfounded. La Paz, on the Gulf of California, suffered a slight outbreak of plague, and Ensenada, on the Pacific side of the peninsular of California, had some cases. Ensenada is but seventy-five miles from San Diego, Cal. The plague was most probably introduced into Mazatlan from San Francisco by the steamer Curacao, which makes monthly trips between San Francisco and the towns on the Gulf of California. It has also been suggested that plague may have come to Mazatlan from the Orient, but no vessel can be named as having touched at Mazatlan from the East. Such an occurrence is extremely rare, so that the great weight of probabilities favors San Francisco as the origin of the Mexican invasion. The Mexican authorities express themselves as "morally convinced" that their infection was derived from San Francisco.

Dr. Wm. Lee Howard sends us two letters and an advertisement which tell their own story:

Wm. L. Howard, M.D., 1126 N. Calvert street: "Patient has improved so much on your Geneva Mineral Water that I wish three more bottles (large) sent regularly until further orders." Depot, 227 North Charles street, Masonic Temple.

To the Manager,

227 N. Charles Street, Baltimore, Md.:

Sir—My attention has been called to an advertisement in a theater program in which my name appears. It is very offensive to me to be featured in such a manner, and I wish you to withdraw the advertisement at once, as it has been printed without my knowledge or consent.

Respectfully yours,

Wm. Lee Howard.

To the Editor Maryland Medical Journal,

Baltimore, Md.:

Dear Doctor—Is there no remedy for such offensive advertising as I enclose? Must we silently submit to such misrepresentation of our character, or go to the manager and give him a thrashing, thereby obtaining greater offensive notoriety for ourselves and much advertisement for the other fellow? I have sent the inclosed letter to the manager of the Lithia Water Co. Please give it prominence in the Journal.

Respectfully yours,

Wm. Lee Howard.

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A CASE OF ANEURISM OF THE AORTA OF TWENTY-FIVE YEARS' DURATION.

By Jose L. Hirsh, M.D.,
Professor of Pathology, University of Maryland, and

Morris C. Robins, M.D.,
Associate Professor of Medicine, University of Maryland, Baltimore.

PATIENT AND SPECIMENS PRESENTED BEFORE THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND BY DR. HIRSH.

THE case of aneurism of the aorta which we wish to record has been under our observation since October, 1899. The patient, G. V., white, aged sixty-two years, applied at the University Dispensary for relief of pains in his throat. The following history was elicited. The family history presents nothing of importance:

The patient admits having had syphilis when a young man. He says he was treated for a year or more. In 1877, while working at his trade as bricklayer, he was struck by a beam in the upper part of the chest just over the sternum. He was removed to a hospital, where he remained for some weeks. While there a small lump was found on the right side of the sternum about the second rib. There was comparatively little pain present at this time. In 1880 the lump had increased slightly in size, and sharp pains were felt. He was then told by several medical men whom he had consulted that he had an aneurism of the aorta. The pain varied in intensity, at times being very severe, at other times almost absent. Patient continued at his work, which entailed considerable physical exertion, until a few weeks prior to his death.

About eighteen months ago (March, 1898) he began to cough, and also noted a decided change in his voice. Occasionally there would be severe attacks of dyspnea, and also regurgitation of food back into pharynx. The lump over the sternum began to throb, and the pains were more constant.

Physical examination showed a rather small, somewhat emaciated man. Mucous membranes pale. Pupils unequal, the right being a little dilated. There is distinct tracheal tugging. Patient

GUSTAV V.—AORTIC ANEURISM OF 25 YEARS' DURATION.

has a brassy cough, and the high notes are squeaky. Examination of the vocal cords show the left to be in a cadaveric position.

The right radial pulse, 76 to the minute, is regular, with slightly increased tension; the left, 65 to the minute, is at times barely perceptible.

About the level of the second intercostal space, in the midline of the sternum and extending to the right and left, there is a tumor about the size of a large egg, soft, pulsating synchronously with the heart, conveying to the palpating heart a strong expansible feel and a diastolic shock.

The percussion note over the tumor and in its immediate vicinity is decidedly dull.

Auscultation shows the second aortic sound to be markedly accentuated, and is heard both to the right and left of the manubrium. While no decided murmur is present, the first aortic sound is rather indistinct.

The heart is slightly hypertrophied, the apex-beat being in the sixth intercostal space, just inside the left mammary line.

Abdominal examination negative. Urine: specific gravity 1022; no albumen; no sugar; no casts; few pus-cells.

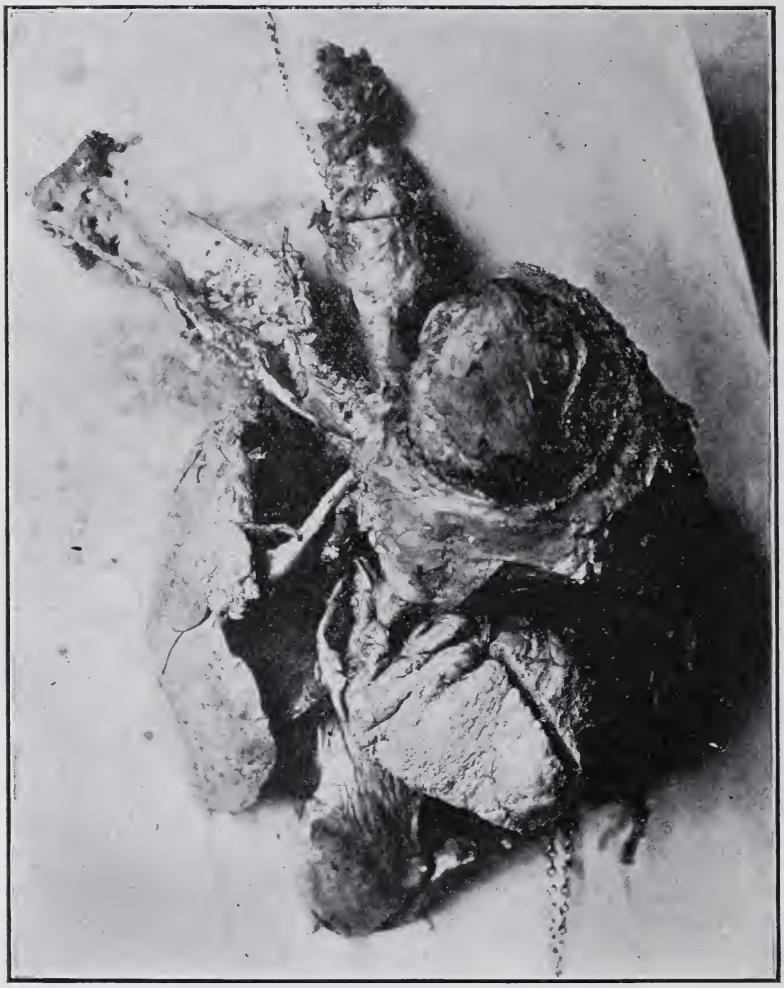
The patient was admitted to the hospital on several occasions, the last time in February, 1901, where he remained until his death, which occurred in May, 1902.

During this time the aneurism was observed to get gradually larger, and at one point the tumor became thinner, and a small amount of fluid exuded. This continued for a time, occasionally a small piece of fibrin coming away. Rupture was thought to be imminent, but the ulcerated area would heal up, only to break down again. Occasionally the exuded fluid was slightly blood-tinged, but a hemorrhage did not occur. In April, 1901, patient had an attack of influenza which lasted about two weeks, and from which he completely recovered.

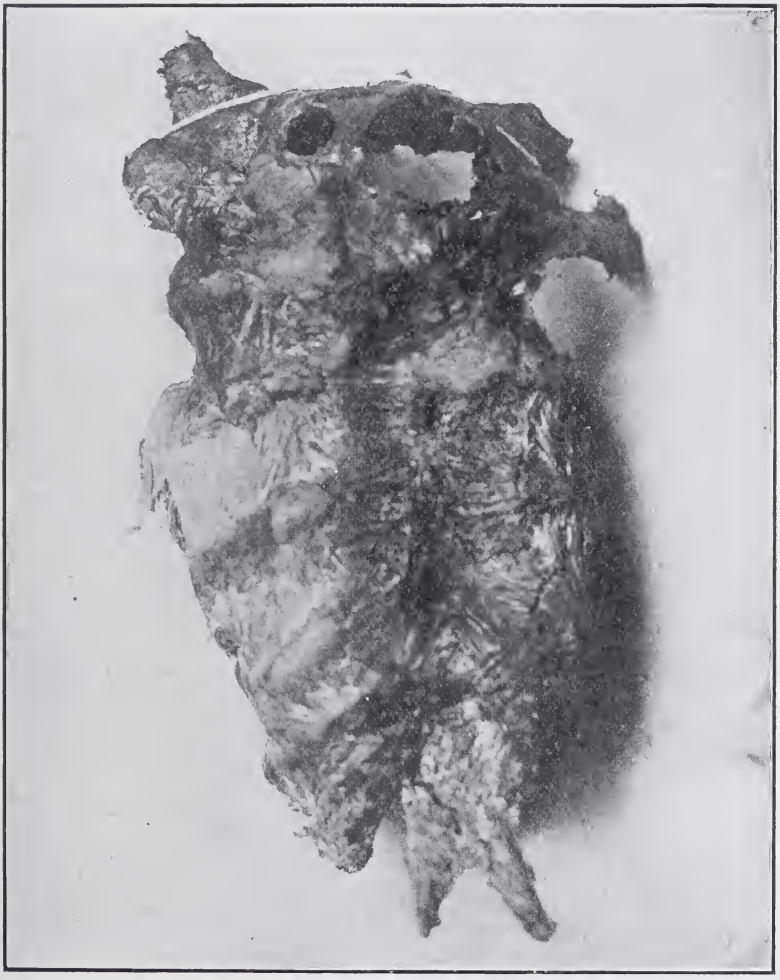
In February, 1902, patient showed signs of progressive weakness, although during this time he did considerable manual work, such as paving the courtyard of the hospital. Only for one week prior to his death was he confined to his bed.

Autopsy was held four hours after death, from which the following notes are taken:

There is a marked protrusion of the upper part of the sternum, over which the skin is tense, shiny, and discolored. This elevated area measures 15 by 11 cm., and extends 5 cm. above the level of the sternum, and extends from the second to the fourth rib and towards the right. About 1 cm. from the right edge of the sternum, about the second intercostal space, there is an opening through the manubrium 1 cm. in diameter. A small fibrinous plug protrudes from this hole, and a dirty, yellowish fluid exudes on pressure. About 2 cm. to the left of this opening there is a second perforation of about the same diameter. Immediately surrounding this area the tissue is soft and boggy. The skin is adherent to the sternum over the site of the tumor, and the underlying muscles show consid-



Aortic Aneurism of 25 Years' Duration.



STERNUM PERFORATED BY AORTIC ANEURISM

erable degeneration. The second and third ribs near the juncture with the right edge of the sternum show considerable necrosis, and small pieces readily crumble off. The inner surface of the sternum shows a deep hollow, caused by the manubrium being pushed forward and upward, forming an angle of about 65° with the gladiolus. There is considerable necrosis of the bone, and corresponding to the openings noted above there are two perforations, each about 2 cm. in diameter (Fig. II). Bulging forward into this cavity and occupying the entire mediastinum there is a tumor the size of a large cocoanut, which is seen to be the dilated aorta. This dilation begins about 3 cm. above the aortic valve, and involves the entire ascending and transverse portion of the aorta. From the transverse portion of the arch a large sac protrudes forward and upward. This is filled with laminated clots. The anterior surface of the sac is somewhat ulcerated; a piece of clot fills up the area. There are no signs of hemorrhage having occurred. The innominate artery is not involved in the sac. The trachea and esophagus do not show evidences of compression, nor are there any evidences of erosion other than those anteriorly.

The heart shows a slight hypertrophy of the left ventricle; otherwise normal. There is marked sclerosis of the aorta. A large sclerotic patch, with hard, brittle plates, is present in the descending thoracic aorta.

The right kidney is about one-half the size of the left, and weighs 130 grammes. Microscopical examination shows a beginning interstitial nephritis.

Bacteriological examination made by Dr. Rankin of the heart's blood, liver, and spleen shows pure cultures of the staphylococcus aureus.

The special points of interest about this case may be summed up as follows:

1. The long duration of the aneurism—twenty-five years. Whipman (*British Medical Journal,* November 2, 1901) reports a case of sixteen years' duration, and states that the longest case previous to his own was one reported by Sir W. Gardner of twelve years' duration.

2. The comparative comfort of the patient was due to the direction taken by this aneurism—that is, forward and upward, and so exerting comparatively little pressure upon the esophagus and trachea.

3. The existence of intercurrent diseases—pneumonia and influenza.

4. The symptoms and signs, giving a classical picture of the disease without depriving the individual of his inability to do manual labor up to within a few weeks of his death.

SOME RENAL AND URETERAL CASES—CALCULUS AND TUBERCULOSIS.

By Hugh H. Young, M.D.,
Baltimore.

READ BEFORE THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY, MONDAY, DECEMBER 15, 1902.

CASE I. *Calculus of the lower end of the ureter, with stricture below it. Extraperitoneal iliac ureterolithotomy, and intravesical division of stricture.*

The first is a man, aged twenty-nine, who came to me on August 28, 1901, with the history that since the age of two years he had suffered with indefinite but constant pain in the region of the left side of the bladder, and occasionally in the region of the left kidney. Every two or three weeks he had sharp attacks of pain on that side which radiated from the bladder upwards to the left kidney. These symptoms continued up to the time I saw him. On examination I found his urine to be clear and without shreds or pus. A week later, after a sharp attack of pain, there were numerous red-blood corpuscles in the urine. Examination showed the bladder to be normal. The orifice of the right ureter was normal in appearance. The orifice of the left ureter was contracted and situated in a cone-like projection of mucous membrane. To the outer side of this the ureteral ridge was replaced by a bulging prominence of mucous membrane. The ureter catheter obtained clear, healthy urine from the right kidney, but it could only be passed about 1 cm. up the left ureter when an obstruction was met, and it was impossible to get any urine from that side. The diagnosis of stone impacted in the terminal portion of the left ureter accompanied by stricture of the ureter was made. *X*-ray pictures were taken, and showed a calculus about the size of the thumb at the lower end of the ureter where it entered the bladder. Extraperitoneal extraction of the calculus was decided on. An incision was made corresponding to the lower two-thirds of Israel's incision. I can show the incision on this patient here (showing patient), which is a more recent case and in which the wound shows a little more clearly.

The incision was carried rapidly through the skin and muscles until the perineum was reached, which was stripped up from the iliac fossa and the vessels exposed. Search was then made for the ureter, which was finally found, very greatly dilated, about one inch in diameter, and so intimately incorporated with the peritoneum that it was very difficult to find it. It was freed by blunt dissection to its vesicle end, and there a large calculus was felt impacted partly within the intramural course of the ureter and partly above it. The calculus was freed by the finger and pushed upward into the ureter to a point about the pelvic brim, where the ureter could be easily reached. Using the stone as a bobbin, several mattress sutures of

fine silk were placed in the ureter, which was then opened and the stone removed. The stone, as you see here, was oval in shape, about 2 cm. long and 1½ cm. in diameter. Its surface shows broad furrows, which have been made by the urine flowing by it. Before closing the ureter a Kelly bulbous ureteral dilator was passed down the ureter, and a tight stricture of its intramural portion just beyond the location of the calculus was discovered. All efforts to pass small catheters and probes were unavailing. It was then determined to divide the stricture from within the bladder. For this purpose the bladder was drawn over into the iliac wound, the vas deferens stripped backward from along its lateral wall, which was then opened extraperitoneally. After evacuating the bladder the end of the left ureter could be easily seen. The orifice was very small and surrounded by a hard, bulging ring. With the end of the index finger of the left hand covering the orifice of the ureter, I finally, by considerable force, pushed the end of the smallest dilator through the stricture until it appeared in the bladder, but was unable to push it further. A scalpel was therefore inserted into the bladder and the stricture divided by cutting along the instrument within the ureter. The stricture was found to be about 4 mm. thick and extremely fibrous. After its division the largest bougies passed into the bladder. The wound which had been made in the left lateral wall of the bladder was then sutured with about eight interrupted catgut sutures. The ureter was closed with fine silk, which had been previously put in position. The abdominal wound was closed with buried silver-wire sutures, leaving a small place for drainage near the lower end. The patient had an uninterrupted convalescence. Neither the ureteral or vesical wounds leaked, and now, one year after operation, he is perfectly well, and the cystoscope shows that the orifice of the left ureter has not contracted, but remains in the shape of a slit.

Case 2. *Calculus impacted in juxtavesical portion of right ureter. Detection by ureter catheter and* x-*ray. Extraction by extraperitoneal ureterotomy.*

This second case is very similar to the preceding. The patient, a male, aged twenty-five years, with a negative past history, had for the first time, five years ago, a sharp cramping pain in the region of the right kidney. This lasted for six hours, when it was relieved by a large dose of morphia. The patient was nauseated and vomited, but there was no hematuria. During the next two weeks patient had two similar attacks, but after that had no recurrence for three years. In December, 1900, the attacks began again, and recurred at intervals of about one month. In these the pain was not localized to the region of the right kidney, but always began in the testicle, and from there radiated to the right kidney. In March, 1901, bloody urine was noticed for the first time, and two weeks later a small calculus was passed. After that the patient was free from symptoms for six months, when the old symptoms returned, and have recurred about every two weeks up to the present time.

When he came to me he complained of more or less constant dull pain deep down in his pelvis. The physical examination was negative; the urine contained only a few shreds. The cystoscope showed a normal bladder, with both ureteral orifices functionating normally. The ureter catheter was passed into the right ureter, but after going a distance of about 4 cm. an obstruction was met with which could not be passed. It was possible, however, to collect urine from this side, and it was found to be of very low specific gravity, and contained very little urea. An *x*-ray photograph was taken, and a small shadow found in the region of the right ureter, just back of the bladder. Another photograph, taken with the bladder filled with a suspension of bismuth, showed that the calculus was about 2 cm. above the bladder. On September, 1902, the calculus was removed through an extra-peritoneal iliac incision, as in the last case. The ureter was about the size of the little finger and very closely adherent to the peritoneum. The stone was tightly impacted at a point about 1½ cm. above the bladder, but was finally dislodged, pushed upward in the ureter and removed, as in Case 1. Small bougies passed into the ureter detected a stricture below the site of the calculus, but it was possible by slight pressure to dilate this stricture, several successive instruments being passed into the bladder fully dilating the ureter. The ureter was sutured as before, and the patient made an uninterrupted recovery. There was no leakage from the ureteral wound. The patient is now in perfect health; urine normal.

Case 3. *Chronic sinus beneath twelfth rib on left side, supposed to be due to necrosis of rib. Cystoscope showed the left ureter not functionating, its orifice contracted. Five stones shown in the left kidney by* x-*ray. Operation, nephrectomy. Cure.*

The patient, a young man, aged twenty-one years, came to me complaining of a fistula in the back which had been present for some years, and which was supposed to be due to necrosis of the twelfth rib, for which he had undergone several surgical operations. His history, however, was as follows: At the age of four he had pain in the left side, associated with swelling. After a few days this passed away, but a little later he had another attack, and during the next five years this intermittent pain and swelling in the left side came on at frequent intervals. At the age of ten he had for a month considerable irritation of the bladder, associated with frequency of urination. He passed no blood nor calculus, however, and since then has never had any bladder trouble. During the next five years he suffered frequently from intermittent attacks of pain in the left side beneath the ribs, which were sometimes associated with nausea, but never radiated to the bladder. In 1897 an abscess formed in the left side, which was opened by a physician and a large amount of pus evacuated. Since then he has had a fistula, which has secreted a small amount of pus, but never any urine. He has been operated on twice for this fistula, which was supposed to be due to necrosis of the rib or spine, but which has not been benefited

by the operations. At present the patient has a dull, aching pain, referred to the left sacro-iliac synchrondrosis, but not in the region of the fistula or beneath the ribs. Urine is voided normally, and there is no vesical irritation. The fistula in the left side secretes only a small amount of white fluid daily. On physical examination the right kidney was found to be larger than normal, and fairly movable. On the left side the kidney could not be felt, and there is no tenderness beneath the ribs. Just beneath the tip of the twelfth rib on the left side there was a scar, in the middle of which was a small fistulous opening, in which a probe passed upward and inward for a distance of about 5 cm. No exposed bone could be felt. Examination of the spinal column was negative. Genitalia normal. Urine clear; microscopically, negative. Cystoscopic examination: The bladder mucosa was normal. The right ureteral orifice was large and functionating regularly, the ureteral ridge well marked. On the left side the orifice small; the ureteral ridge is not present, and the ureter is not functionating. The diagnosis of blocking of the left ureter of long standing was made at once.

An *x*-ray picture was taken, and showed the shadows of five calculi in the region of the left kidney. On October 28 an extraperitoneal lumbar nephrectomy was performed. The left kidney was found higher up beneath the ribs and closely adherent to the diaphragm above, and the vertebrae within. It was surrounded by a very dense capsule. The twelfth rib had to be resected, and even then the kidney was removed with great difficulty. It was small, measuring 3x4x5 cm. in size. The cortex was almost entirely replaced by fibrous tissue, which formed a sac for the five stones which it contained. The wound was closed with a small drain, and the patient made an uninterrupted recovery. It is now six weeks after the operation, and he is ready to go home. His urine is clear.

Case 4. *Dull, aching pain for ten years in left side. Cystoscopic examination: Pus coming from left ureter. Radiograph negative. Left lumbar nephrectomy. Dense fibrous capsule one inch thick surrounding the kidney, and several calculi.*

This case, a male, aged thirty-eight years, had a history of pain in the left side which began about ten years ago, and which has been more or less continuous ever since. It has always been dull in character, has never simulated renal colic, and no calculus has ever been passed. Urine has been cloudy for several years. He had suffered considerable with night sweats, and lost fifteen pounds in the last year. There has been no vesical irritation. On examination an indurated mass was to be felt in the region of the left kidney, but was not tender on pressure. The cystoscope showed the right ureteral orifice to be normal and emitting clear urine. The left ureteral orifice was surrounded by swollen reddened mucous membrane, and from it there escaped a string of muco pus. The ureter catheter obtained clear urine from the right kidney, but on the left side an obstruction was met with about 4 cm. above the orifice, and

no urine could be obtained. The urine contained pus, but no bacteria. Numerous attempts to find tubercle bacilli, negative.

Several radiographs were taken, but no calculus was detected in the region of the left kidney or ureter. Tuberculin was administered, but no reaction obtained.

It was impossible to make a positive diagnosis. The symptoms suggested tuberculosis, and the failure to find a calculus by the *x*-ray seemed to support this. It was impossible, however, to find tubercle bacilli, and the tuberculin test was negative. On November 25 the kidney was exposed through an incision in the left lumbar region. It was found to be surrounded by an exceedingly dense, thick, fibrous capsule, in places one inch thick. After cutting through the capsule a large pyonephrotic kidney, containing several large stones, was exposed, and finally enucleated and removed with the ureter, which was divided just at its vesical juncture.

The wound was closed with drainage, and the patient has made an uninterrupted recovery. His urine is now clear, and contains only a few shreds.

Case 5. *Symptoms of calculus in right kidney for twenty-three years. Pain in left kidney for one week. Pus obtained from both sides by ureteral catheterization. Large calculus in both kidneys demonstrated by* x-*ray. Right lumbar nephrolithotomy.*

This patient, a male, aged forty-two years, had first a severe attack of pain in the right lumbar region twenty-three years ago. After that he had intermittent attacks of pain almost every day, often slight and of short duration, but frequently severe, and running down to the right groin. During the past two years the severe attacks occurred every four or five weeks. He never passed a calculus, and had never seen any blood in his urine. When first seen he had an acute cystitis and urethritis, in which no bacteria could be found. During the following week he had four attacks, one of which was very severe and localized in the left groin and back. Patient has improved by a week's use of urotropin. Ten days after admission the urethra still contained pus, but no bacteria could be found. Urine was cloudy in all three glasses. The prostate was indurated, and the right seminal vesicle contained two hard nodules which felt like calculi.

During the next week the patient began to have a dull, aching pain on the left side, which finally became more severe than that on the right. He had never before had any pain on the left side. Urine was still very cloudy with pus, but as the urethral discharge had largely disappeared, catheterization of the ureters was performed, and purulent urine obtained from both sides. The percentage of urea was low in both specimens. There were no bacteria to be found in either. An *x*-ray picture was taken, and showed a large shadow in each kidney. The diagnosis of bilateral renal calculus and pyonephrosis was made.

The patient was secreting only about 10 grammes of urea daily, and on forced diet this amount was not increased, and it was evident that both kidneys were considerably diseased. The continuance of severe pain rendered operation necessary, and it was therefore decided to remove the calculus from the right kidney first and to wait until a later date to remove that from the left. On November 20, under ether, right kidney was exposed extraperitoneally through the lumbar incision. The fatty capsule was not thickened or adherent. The kidney was larger than normal, and in places lobulated and considerably congested. In the pelvis a large stone could be felt. A small incision was made along the outer border, a forceps pushed through the cortex into the pelvis, and the blades separated, thus making a wound through which the calculus was extracted. This calculus measured about 1½x1x1 inches. About twenty-five small calculi were afterward removed with a spoon. Some of these were typical jackstone calculi, with long branches from a slender body. The kidney wound was closed around the large drainage tube which led into the pelvis. The wound was closed with drainage, as usual. There was very little hemorrhage and absolutely no shock following the operation, and the patient made an uninterrupted recovery. The use of the rubber tube to drain the pelvis of the kidney proved an excellent scheme, as it prevented a collection of blood clot in the pelvis of the kidney. The patient was much freer from pain than in cases in which the kidney was closed without drainage. The patient is now going about and feels perfectly well. His urine is still loaded with pus, but he is free from pain. He has had no symptoms from the calculus in the left kidney since the operation. He will be watched closely, and in a month or two when he has fully recovered from the last operation the calculus will be removed from the left kidney.

Case 6. *Intermittent attacks of renal colic on the left side for three years. Stricture of lower end of left ureter, impermeable to ureter catheter. Right ureter and kidney normal. Tubercle bacilli in urine. Nephro-ureterectomy.*

This patient was a male, aged thirty-five years, who complained of pain in his left side and back. Three years ago he was taken with a severe pain in the left lumbar region, which radiated from there into the bladder and to the glans penis. The pain was extremely severe and lasted about one-half hour. After that he had similar attacks about twice a week, but never passed any blood nor calculus. At times he had fever and night sweats. He suffered a great deal, but never lost any weight. When seen by me his urine contained a great deal of pus, in which tubercle bacilli were present. There was no tenderness in the region of the left kidney or ureter.

The cystoscope showed a healthy bladder, with the exception of the left ureteral orifice, which was obscured by several polypoid-like projections of mucous membrane which surrounded its orifice. The adjacent mucosa was considerably injected. The right ureteral nephro-ureterectomy was performed. At the time of operation

orifice was normal, and a ureter catheter was easily inserted and clear urine withdrawn. Attempts were made to catheterize the left ureter, but it was impossible to get the catheter to enter, probably owing to a stricture at the orifice. On October 1 extraperitoneal tubercle bacilli had not been found in the urine, and no positive diagnosis had been made, and the ureter, which was first exposed, was found to be the size of a leadpencil, and its walls greatly thickened. Suspecting calculus of the lower end, the ureter was followed down to its vesical juncture, but no calculus was found. The kidney was then exposed, and was found to be enlarged and lobulated, and so definitely diseased that I decided to remove it without cutting into it for diagnosis. The kidney, with the entire ureter, down to about one inch of the bladder, was removed in one piece. The muscular wound was closed with two places for drainage, and the patient made an uninterrupted recovery.

Examination of the specimen after removal showed miliary tuberculosis of the pelvis, several small portions of the cortex, and the entire ureter. Another search was made for tubercle bacilli in the urine passed just before operation, and they were found present. This case was particularly interesting on account of the fact that the history suggested calculus much more than tuberculosis.

Case 7. *Extensive pyonephrosis of left kidney of eight years' duration following typhoid fever. Typhoid bacillus present in pure culture. Catheterization of ureters. Right kidney healthy. Extraperitoneal nephrectomy. Cure.*

This patient, male, aged forty-four years, presented himself with a tremendous pus kidney upon the left side, which had begun after an attack of typhoid fever eight years previous. From his urine pure cultures of the typhoid bacillus were obtained. As it is our intention to make an extensive report on this case elsewhere, I shall only show the specimen which was removed.

As you see from this specimen, the kidney and its pelvis were greatly dilated, forming a sac which contained about a quart of pus. The kidney was surrounded by a very dense capsule about one inch thick. Imbedded in one portion of the cortex was one large calculus. The *x*-ray picture had failed to show this, probably owing, as in Case 4, to the very thick, dense capsule, which cast a shadow and obscured the calculi. It was impossible to remove this capsule owing to dense adhesions to the peritoneum and surrounding structures, and intracapsular enucleation was performed.

When the pedicle was reached a circumcision of the capsule at the hilus was performed, this giving me a chance to isolate the vessels of the pedicle and ligate them before division. The abdominal wound was closed, with a small place for drainage, and the patient made an uninterrupted recovery. His urine is clear.

Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

VACCINATION AND SERUMTHERAPY AGAINST THE BACILLUS OF DYSENTERY.

F. P. Gay (*University of Pennsylvania Medical Bulletin,* November, 1902) presents his results regarding experimental vaccination and serumtherapy against infection with the bacillus of dysentery in guinea-pigs, and it is thus in the nature of a contribution to the subject of the prevention of bacillary dysentery and its treatment by means of a specific serum in man. In carrying out the work Gay made use of strains of bacilli from various sources, employing this series for the production of vaccines and for the immunization of horses. Gay describes his method of determining the minimal lethal dose, the method of preparing vaccines, the protection by vaccination, calling attention to the fact that guinea-pigs that have received one or more subcutaneous injections of subminimal lethal doses of vaccine show a marked protection against intraperitoneal lethal doses of the living organisms. After giving in detail his results with antidysenteric serum, Gay arrives at the following conclusions:

1. The bacillus of dysentery (Shiga) is the cause of acute and other forms of dysentery in tropical and temperate climates, and probably of a part of the summer diarrheas prevailing in warm countries among infants.

2. Guinea-pigs are susceptible to experimental infection with B. dysenteriae, and react to inoculation in a characteristic manner.

3. The bacillus of dysentery, cultivated outside of the body, quickly suffers a reduction in virulence for guinea-pigs, but the virulence can readily be increased by successive passages through the bodies of these animals.

4. The passage of B. dysenteriae through guinea-pigs permits of the establishment of a uniform grade or degree of virulence in the organism, irrespective of its source, which adapts it for the production of vaccines of quite uniform activity.

5. The vaccines consist of suspensions of dysentery bacilli killed by the addition of tricresol, the activity of which undergoes an increase, for a time at least, that is coincident with disintegrative changes taking place in the micro-organisms.

6. This vaccine suffices to protect guinea-pigs from a succeeding multiple fatal dose of living dysentery bacilli, and to produce in the horse an active immune serum.

7. The immune serum of the horse exhibits marked protective properties in preventing fatal infection with B. dysenteriae or intoxication with its vaccine in guinea-pigs.

8. While the several dysenteric bacilli used in this investigation belong to one definite species, minor distinctions were present among them. The most marked differences noted were the weaker virulence of the "Kruse" strain as compared with the other strains of bacilli, and the slightly reduced activity of vaccine and immune serum when directed against strains of organisms other than that from which they were prepared.

9. The bacillus of dysentery resists bacteriolysis by blood serum to a greater extent than some other members of the colon-typhoid group of bacilli.

10. A useful serum therapy of bacillary dysentery and of certain forms of the summer diarrheas of infants is rendered highly promising.

* * *

COMPLICATIONS OF DYSENTERY.

Remlinger (*Revue de médecine,* 1901, p. 873), from a consideration of the 281 cases of dysentery met with by him in Tunis during a period of three years, gives the results of his bacteriological and clinical experiences. From the stools colon bacilli were obtained exclusively, and amebae were never found. Among the rare complications which he met with were one case of acute nephritis, two cases of general anasarca without albuminuria, in which the urea was lessened, and in one case the permeability of the kidney was increased and decreased in the other; one case of acute arthritis of the knee, two cases of left epididymitis, one of phlebitis, and one of splenic abscess, which ruptured into the peritoneal cavity and terminated fatally.

* * *

EOSINOPHILIA IN PELVIC LESIONS AND IN THE VERMIFORM APPENDIX.

Weir (*American Journal of the Medical Sciences,* January, 1903) discusses eosinophilia in pelvic lesions and in the vermiform appendix in the material of the gynecological department of Lakeside Hospital. After reviewing the literature and giving in more or less detail the results of his own observations, he comes to the following conclusions:

1. Eosinophiles take a prominent part in the cellular infiltration associated with inflammatory and suppurative processes of the pelvic organs.

2. In such conditions they usually occur in the largest numbers in the subacute stage and associated with connective-tissue hyperplasia.

3. Eosinophilic infiltration is found in most cases of carcinoma of the cervix, and in almost all cases of pyosalpinx and ovarian abscess.

4. In inflammatory conditions of the endometrium eosinophiles occur in small numbers and in but few cases.

5. Eosinophiles represent a large proportion of the cells form-

ing the stroma of the mucosa in the normal and the diseased appendix.

6. In inflammatory conditions of the pelvic organs associated with an eosinophilic infiltration of the tissues the percentage of eosinophiles in the circulating blood is rarely increased, and usually decreased.

* * *

RADIOTHERAPY AND PHOTOTHERAPY IN CARCINOMA, TUBERCULOSIS, AND OTHER DISEASES OF THE SKIN.

Hyde, Montgomery, and Ormsby (*Journal of the American Medical Association,* January 3, 1903) present an interesting paper on the use of the *x*-rays and the actinic solar rays in the treatment of carcinoma, tuberculosis, psoriasis, and various other skin diseases. They report twenty-one cases, and from these and from a consideration of the literature believe that they are justified in drawing the following conclusions:

While it is too early to form definite and sweeping conclusions regarding the value of radiotherapy and phototherapy in all the affections in which they have been employed, our experience leads us to believe that in tuberculosis of the skin these methods of treatment are superior to any others now known to us. In lupus erythematosus, phototherapy has in our hands given very satisfactory results, far better than those we have obtained by any other method.

In superficial carcinoma involving considerable areas, radiotherapy is undoubtedly preferable to all other known methods of treatment. Superficial lesions more circumscribed are equally amenable to treatment with the *x*-rays, though in many instances small tumors can be removed more promptly by complete erasion or excision. For many of these circumscribed growths we are now inclined to advocate removal either with the knife or curette, followed by a series of treatments with the *x*-rays. In operable carcinoma of the skin which includes deeper tissues we advocate complete extirpation, followed by *x*-ray treatments. Where the growths are inoperable radiotherapy offers a possible chance of recovery, or of lessening the discomfort of the patient. As a result, however, of our observation of our own and other cases, we believe that in exciting an inflammation in carcinoma one is, to some extent at least, encouraging an extension of the growth through a dissemination of the cancer-cells to normal (or inflamed) tissue. We believe this possibility constitutes a danger in the treatment of carcinoma by the *x*-rays that has not been sufficiently recognized.

The value of radiotherapy in extensive cases of hypertrichosis has been fairly well established by other observers. It has given us excellent results in the majority of cases of psoriasis treated. It has unquestionably been used successfully in many of the chronic inflammatory diseases of the skin, especially in acne, rosacea, fol-

liculitis, and suppurating wounds, but until this agent can be employed with greater accuracy we believe it should be reserved chiefly for those cases in which better known and better controlled methods are not successful.

It is not yet possible to draw definite conclusions with reference to the comparative values of radiotherapy and phototherapy. The former is, for the most part, readier of application, and apparently has a wider field of usefulness than the latter. In lupus erythematosus, however, phototherapy has repeatedly given us excellent results where the *x*-rays have failed altogether or aggravated the condition. Judging from our experience and from the larger experience of Finsen and others in the treatment of tuberculosis of the skin, we believe that in this disease phototherapy gives in the end results as rapid as those obtained with the *x*-rays, with better cosmetic effects, and without danger of deep burns.

There is no doubt that phototherapy and radiotherapy are valuable additions to our methods of treating certain diseases. There is also no doubt that their field of usefulness eventually will be proven much more restricted than that in which they are employed at present. Unfortunately, there can be no doubt also that harm is doing and will be done by the action of *x*-rays in the hands of the unskilled or the unscrupulous. No one should attempt to employ radiotherapy who has not first carefully studied the subject and followed the work of some expert. Even with such preparation great caution is needed in acquiring experience with this new therapeutic agent, its accurate control and the character of results obtained being still subjects of discussion.

* * *

PATHOGENESIS OF PERNICIOUS ANEMIA.

Syllaba (*Rospravy Ceské Akadémie,* IX, No. 22) has attempted to determine whether pernicious anemia consists in an increased destruction or deficient production of erythrocytes by an examination of the blood serum in five cases of this disease which he observed during a year. In the first case, which was associated with a marked jaundice, the serum was clear, red in color, and contained hemoglobin and bilirubin, while in the other four cases, with a less icteroid condition, the serum was golden yellow in color, deeper than the normal color of the serum, contained no hemoglobin, but bilirubin was present in varying amounts. The hemoglobinemia is evidence that there is an increased destruction of red-blood corpuscles, and in the first case this destruction was much more intense than in the other four cases. The author is therefore of the opinion that pernicious hemolysis is the essential characteristic of pernicious anemia, which is brought about by some form of poison which is up to the present time hypothetical. This poison finds its way into the blood-current either from the gastro-intestinal canal from a diseased organ, or exceptionally from the lungs or skin.

REVIEW IN NEUROLOGY.

Under the Supervision of Robert Reuling, M.D., Baltimore.

Prophylaxis of the After-Affections of Syphilis. *Journal American Medical Association,* November 8, 1902, p. 1219.

Cohn regards tabes and progressive paralysis as the necessary result of the accumulation in the blood of the living bacterial and dead toxins from the latent neoformation of the syphilitic poisons. Mercurial treatment is of no avail at this stage, and does only harm. The toxins have an elective action on certain portions of the nervous system after accumulating to a certain amount in the blood. This progressive specific dysemia is apparent in the complexion of syphilitic subjects in the incipient stage of tabes. He suggests that it might be possible to ward off these after-affections by periodical, repeated venesection at long intervals. Withdrawal of a certain amount of blood would free the body from the toxins contained in it, and the new blood that would be produced to take its place would take up the struggle against the bacteria with fresh energy, and an increased elimination of toxins would follow. As this measure of systematically repeated venesection would be harmless, he thinks if the organism is once saturated with the syphilitic poison it is our duty to employ it. He believes that it might be possible to induce local immunity against the primary infection by prophylactic local mercurial inunctions, systematically repeated at intervals, supplemented by mechanical and mercurial measures after possible infection. He also advocates multiple small injections of mercury in a circle around the primary lesion when it first develops. It is possible that the mercury may follow the germs into the glands and annihilate them there, in addition to its effect on the lesion itself. And when the disease is once thoroughly established the accumulation of the poisons in the blood must be combatted by systematic blood-letting at certain intervals.

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The Heart and Nervous System. David Ferrier. (The Harveian Oration.) *The Lancet,* October 25, 1902.

This very imperfect abstract of Ferrier's interesting paper is only presented in the hope that the reader may be induced to consult the original. The author presents so many interesting physiological questions, many of them original observations and suggestions, that the subject is made interesting to the physiologist as well as to the physician. Then the subject should be of special interest, as it seems that very few investigators in medicine have considered the more general relationship of the central nervous system to the heart. The author shows that Thomas Willis was perhaps the originator of the foundations for a more correct neurophysiology. His work on the descriptive anatomy of the brain, the arrangements of its blood-vessels, the distribution of the cranial, and the relations of the vagus and intercostal, or sympathetic

nerves to the thoracic and abdominal viscera contains much of enduring value. He clearly differentiated between the nerve centers governing the viscera from those which regulate the functions of animal life, and came near formulating a true conception of the nature of reflex action. Willis as well as Harvey had observed that the heart of a cold-blooded animal would continue to beat when separated from the body, and even when cut in pieces, each portion continuing to execute its own rythmical contractions. They considered the heart endowed with an inherent activity of its own, independent of the brain and spinal cord. The discovery in more modern times of the ganglia in the heart substance by Remak, Bidder, and Ludwig naturally led to the belief that its contractions are continued by rythmical stimuli proceeding from these intracardiac centers. The cardiac ganglia are most likely merely peripheral ganglia of the efferent visceral fibers of the vagus.

The heart, however, in its normal relations is not a mere mechanical pump, automatically working so many times a minute and turning out so many gallons of blood per diem in steady and regular flow. The needs of the organism are ever changing, and the heart and vascular system are ever adapting themselves in accordance therewith. There is hardly an act or thought or feeling which does not reflect itself in the rate of the heart and state of pulse. The most epoch-making discovery in reference to the innervation of heart was the observation of the brothers Ernest and Edward Weber, in 1845, that electrical irritation of the vagus caused the heart to beat more slowly or to stop altogether for a time in a state of diastole. Through the vagi the cardiac centers exercise a more or less constant restraining influence, so that when they are cut the heart beats more quickly.

The heart, like the viscera, is, in normal conditions, but poorly endowed with sensibility, and is barely, if at all, sensitive to tactile stimuli. This fact was first demonstrated by Harvey in the case of the son of Viscount Montgomery, whose heart had been exposed by destructive ulceration of the chest wall. Those interested in the subject of relationship between visceral pain and cutaneous sensibility should read Head's brilliant work on the subject. Pursuing Ross' hypothesis that the viscera receive their sensory fibers from the same segments of the spinal cord as those from which the somatic sensory roots arise along which pain is referred, he has succeeded in mapping out with marvelous definition the segmental relations of the sensory nerves of the various viscera. From these it appears that painful conditions of the heart are referred not only to the regions connected with the vagi, but also into those of the upper dorsal segments whence the heart also receives its chief motor supply. The sensory nerves of the heart, therefore, lie not only in the vagus, but also in the rami communicantes of the upper dorsal nerves. What is the respective origin of these nerves in the heart is not as yet certain, but the recent investigations of Koster indicate that the depressor nerve, the afferent nerve of the

heart *par excellence,* is in reality the sensory nerve of the aorta, and not of the heart itself.

Cases are on record in which apparently, by voluntary effort, the action of the heart has been inhibited or rendered almost imperceptible. The best authenticated instance of this kind is that of Colonel Townsend (related by Cheyne in his "English Malady," 1733), who was able to throw himself into such a state of suspended animation that heart and breathing ceased to be appreciable by ordinary tests. More wonderful things have been related of Indian fakirs. Like the heart, the caliber of the blood-vessels is regulated by mutually antagonistic sets of nerves—the vaso-constrictors (vaso-motor), and the vaso-dilators (vaso-inhibitory). The actual proof of the action of the vaso-motor nerves was first given in 1850 by Claude Bernard in the well-known dilatation of the vessels in the rabbit's ear on section of the cervical sympathetic, followed almost immediately by the demonstration of the converse result on electrical stimulation of the distal end of the cut nerve. The blood-vessels are constantly in a state of semi-contraction, which is kept up mainly by the nervous system. The center which governs the caliber of the blood-vessels is situated in the medulla. Great rise of intracranial blood-pressure causes slowing of the heart. This is brought about by direct pressure on the medulla.

* * *

The Parasyphilitic Affections—The Curability of Tabes and General Paralysis by Intense Mercurial Treatment. Dr. Leredde. *Philadelphia Medical Journal,* January 10, 1903.

It will seem indeed strange should the claims of Dr. Leredde prove true that the use of heroic doses of mercury should have curative effects in parasyphilitic processes. Such attempts must have been frequently made, especially at the time when mercury was used so extensively and large dosage was in vogue. The following are some of the more important points brought forth in Dr. Leredde's article:

"After having cured a case of tabes with mercurial treatment, after thorough researches upon the parasyphilitic affections and cases of recovery from tabes and general paralysis, I have become absolutely convinced that in syphilitic patients these diseases are not only syphilitic in origin, but can also be cured by mercurial treatment if mercury be pushed to very high doses." The author refers to the very convincing, and in some ways remarkable, experiments of Kraft-Ebing, in which nine subjects with general paralysis, in whom neither examination nor history revealed any trace of previous syphilis, fifteen to twenty inoculations of products from mucous patches and hard chancres were made. All the patients but one were observed for 180 days, and not one of them developed syphilis. Fournier includes several diseases under the general term of parasyphilitic affections, namely, tabes, general paralysis, hystero-neurasthenia, hystero-syphilis, a special form of

apoplexy, and a special form of muscular atrophy; under hereditary syphilis, general or partial dystrophic disturbances, organic malformations (dental especially), arrested or delayed development (both physical and intellectual), infantilism, cachexia, rachitis, hydrocephalus, and surely juvenile tabes and juvenile general paralysis. Leredde's case presented the following clinical picture:

A man, who in a very brief period (time not given) develops symptoms of rapidly-progressing tabes, with marked ocular and visceral disturbances, muscular atrophy, tachycardia, etc. The treatment, the author says, was "energetic from the start." He gave injections of 1 c. gm. of mercuric cyanide, followed by weekly injections of 10 c. gm. of calomel. The symptoms gradually disappeared, and complete recovery has lasted two years. The author gives this rather brief description of the case. A more complete report, he says, can be found in the *Bulletin de la Société de Dermatologie,* Paris, March, 1902.

* * *

A Study of the Affections of the Nervous System in Leukemia. Richard Spitz. *Deutsch. Zeitsch. f. Nervenheilkunde,* Vol. XIX, Nos. 5 and 6.

As the author points out, since the introduction of more perfect technique, and especially more delicate and satisfactory staining methods, pathologists have found that a great variety of degenerative and inflammatory conditions affect the central nervous system during a great variety of diseases in which such changes were formerly not recognized. These pathological changes in the central nervous system very frequently give rise to no clinical symptoms, and this is probably the main reason why they were so long overlooked. A very good example of how extensive the degenerations may be, and still give rise to practically no symptoms, is seen in certain cases of pernicious anemia, with degeneration in the posterior columns, and the only symptom this produces at times is a loss of the patellar reflex. The same may be said of certain conditions of the central nervous system in leukemia. The author's case was one of extremely acute fatal leukemia.

A woman, aged forty-seven years, who had previously enjoyed good health, is taken ill three weeks before admission to hospital with symptoms of progressive weakness, dyspnea, and cough, with expectoration of blood-stained sputum. On examination no enlargement of the glands was made out, nor was the spleen palpable. There was no tenderness of the bones. Eye-grounds negative. The blood examination showed 25 per cent. hemoglobin, with a relationship of red cells to white 1:20. In ten days the hemoglobin fell to 15 per cent. At this time a condition of hemorrhagic diathesis existed, with hemorrhages from the uterus and into the skin. Death on the thirteenth day, with symptoms of air-hunger. The autopsy failed to show the presence of any lymphomatous formation as described by Fraenkel and Benda. The following changes were found in the central nervous system: In

almost every portion of the brain and spinal cord circumscribed areas of degeneration were found. These consisted of acute degeneration of the nerve fibers, with considerable round-cell infiltration and a few polymorphonuclear leucocytes among them. These areas were generally found in the vicinity of a capillary, the latter being usually almost plugged with the white-blood cells. The author describes these changes very minutely, but the want of space will not admit of a more detailed description. The reader is therefore referred to the original article, which is of unusual interest.

SURGERY.

Under the Supervision of Hugh H. Young, M.D., Baltimore, Assisted by H. A. Fowler, M.D.

ACUTE GENERAL GONORRHEAL PERITONITIS. By Guy L. Hunner, M.D., and Norman MacL. Harris, M.B. (Tor.). *Bulletin Johns Hopkins Hospital,* June, 1902.

The authors report seven cases of general peritonitis due to the gonococcus, and give in a tabulated form the results in thirty-two additional cases from the literature.

In this series of seven cases the diagnosis was based upon the demonstration of the gonococcus in four cases, and upon clinical evidence in the remaining three cases. Operation was performed in every case, with two deaths and five recoveries.

An analysis of the cases from the literature, including the authors' seven cases, shows the following:

1. Cases in which there was bacteriologic proof.

Total, 18 cases.....	Operated upon.....13	Recovery	11
		Deaths..	2
	Not operated upon, 5	Deaths..	5

2. Cases with clinical evidence only.

Total, 21 cases.....	Operated upon.....11	Recovery	8
		Deaths..	5
	Not operated upon, 10	Recovery	8
		Deaths..	2
Summary of 39 cases...	Operated upon.....24	Recovery	19
		Deaths..	5
	Not operated upon, 15	Recovery	8
		Deaths..	7

These numerical statistics thus show a decided advantage in favor of operation in this class of cases. The authors point out, however, that a closer study of the individual cases demonstrates the fact that the relative merits of the two methods of treatment are not correctly shown by these statistics.

From a careful study of the cases of the literature, together with the experience of a series of nine cases in the Johns Hopkins Hospital, the authors are convinced that the surgical treatment of gonorrheal peritonitis is of doubtful therapeutic value. They recommend the following treatment in a case of general peritonitis due to the gonococcus: absolute rest in bed, hot-turpentine stupes alternating with hot-water stupes, mild catharsis, liquid diet, cold sponges for the high temperature, and stimulation, according to the severity of the symptoms.

The difficulty in employing this line of treatment in preference to operative interference lies in the difficulty of making a positive diagnosis. General peritonitis due to other causes must be ruled out.

With a history of gonorrhea, with demonstration of the organism in the secretions, followed by pelvic pain and tenderness, with a mass in the region of one or both ovaries, the diagnosis becomes probable. The symptoms of acute gonorrheal peritonitis are similar to those of other forms of general peritonitis—abdominal distention, tenderness and rigidity, vomiting, elevation of temperature, and frequency of pulse—but the clinical course of the disease is characteristic. The acute symptoms at onset, lasting for one to three days, are rapidly followed by a marked amelioration, and recovery soon follows.

The fact that the disease is particularly fatal to children is held to be due not so much to the susceptibility to infectious diseases characteristic of childhood as to the fact that children fail to receive the treatment accorded to adults.

If the peritoneal cavity be opened on a question of diagnosis and a dry, plastic peritonitis be found, the intestines should be disturbed as little as possible. There is no gain in wiping off the dry fibrinous exudate, and this insult to the intestines reduces the vitality of the patient. If the tubes contain pus in appreciable quantities, they should be removed.

The most progressive gynecologists are beginning to doubt the advisability of removing gonorrheal pus tubes.

* * *

A Contribution to the Treatment of Fractured Patella. By Prof. Von Mikulicz-Radecki. *British Medical Journal,* December 13, 1902.

Two methods have been employed in the treatment of fractures of the patella at the Breslau Hospital during the past twelve years—(1) medico-mechanical method, and (2) suture of the patella. The choice of the method in any case depends upon the nature of the fracture as determined by careful examination.

For the purpose of laying down certain principles which may be of service in the selection of the proper method in any case fractures of the patella are divided into two groups: (1) "Blow" fractures, those resulting from direct violence. In this class the ligaments remain intact. (2) "Tear" fractures, by which is meant those cases

in which there has been solution of continuity in the ligamentum properium patellae and the quadriceps tendon or in the parapatellar ligaments. One finds very frequently a combination of these two conditions which would form a third class, designated as combination fractures. These cases, however, are included under the second class, as the treatment is the same for all these cases. The essential differences between blow and tear fractures is that in the former the accessory ligaments remain attached to both sides of the patella, no matter into how many pieces the bone may be broken. A wide separation of the fragments, therefore, cannot take place. In tear and combination fractures the ligaments are torn, and a wide separation of the fragments takes place.

The only criterion for differentiating between a blow and a tear fracture in any individual case is the behavior of the quadriceps tendon. If, soon after the injury, the patient is able to extend the leg, this naturally points to maintenance of continuity of the ligaments. It may be the patient is unable to extend the leg on account of pain. On the other hand, in any attempt at extension, if the ligaments are torn, one notices a separation of the fragments, the quadriceps pulling up the upper fragment. In a similar way the gap is widened if the knee-joint is passively flexed.

Blow fractures are treated medico-mechanically; tear fractures are sutured. The medico-mechanical method of treatment consists in immobilization of the joint for a short time with elastic compression to hasten reabsorption of the effused blood, massage to the knee-joint, especially the quadriceps; patient gets up at the end of a week with a removable plaster of paris splint. This splint is laid aside at the end of three weeks.

In suture of the bones the operation is performed without exsanguinating the limb. The transverse incision is used. The suture material at first used was silver wire. More recently brass wire is used, because much stronger. Three or four sutures are placed through the patella—according to the length of the fracture—care being taken not to include the cartilage. Great emphasis is placed upon the value of suturing the accessory ligaments on either side with one or two sutures. The wound is not drained. The subsequent treatment is the same as for blow fractures, except that it begins about a week later, that is, after the healing of the operative wound.

The results are given of an analysis of forty-five cases treated at the Breslau Hospital. Of these, sixteen were treated without operation, while in twenty-nine cases there were thirty operations, there being one case of refracture. Of the sixteen cases, seven were examined subsequently, in five of which the patella appeared to be firmly united, but in three of these the *x*-ray picture showed a fissure at the line of fracture, while in the other two the line of fracture could no longer be made out. Of the nine cases which could be followed subsequently, in eight the functional results were good, while in one the result was only moderate.

Of the thirty cases treated by suture, in twenty-six the wound healed by first intention. The four cases of infection occurred early in the series when the technique was not so rigid as at present. In seventeen cases of operation the results were: fourteen good, three moderate, and one unsatisfactory. In the last case the sutures had cut through and there was a separation of 1.5 to 3 cm.

Of fourteen cases subsequently examined, in twelve the patella appeared to the touch to be closely united, but the *x*-ray showed complete bony union in only eight of these. It is a striking fact that while digital examination showed apparent bony union in a large number of cases, the *x*-ray showed this number to be relatively small.

The statistics show that both methods give good results with a proper interpretation of indications and a correct technique. These two methods do not stand in opposition, but the one supplements the other, and each has its own well-defined indications.

* * *

Results of Operations on the Kidney for Tuberculosis. By Edgar Garceau, M.D. *Annals of Surgery*, October, 1902.

Garceau has studied the results of operations on tuberculosis of the kidney in 194 cases collected from various sources. These results are compared with those reported by Bangs in 135 cases, and by Facklam in 88 cases, making a total of 415 cases.

In the 415 cases the immediate mortality was 17.8 per cent.; the general mortality was 29.4 per cent. The total number of cures after two years or over was fifty-eight, or 14 per cent. The percentage of promising cases, which includes all those well a few months following the operation, was 58 per cent. The operations for tuberculosis of the kidney as studied in this list are:

1. Nephrectomy.
2. Nephrotomy.
3. Nephrotomy, followed by nephrectomy.
4. Nephrectomy and total resection of the ureter.
5. Nephrectomy and partial resection of the ureter.
6. Resection.

In the author's series of 194 cases the per cent. of cures is 21, as against 7.4 and 7.9 per cent. in the earlier cases. While the results of operation upon tuberculosis of the kidney are disappointing, the later statistics are much more favorable. This is due to the greater care in the selection of cases for operation, and to the fact that with the improved methods for diagnosis patients have been operated upon earlier in the disease.

The percentage of cures is small, because in renal tuberculosis the primary focus is rarely in the kidney, the renal disease being secondary to a focus elsewhere in the body, and even when the urinary tuberculosis has been completely removed the primary focus may be the cause of subsequent death. In a series of 3424 autopsies, tuberculosis of the kidney was found twenty-four times, but in every case it was associated with tuberculosis in other parts

of the body. One cannot say definitely in these cases that the renal tuberculosis was secondary, but, considering the greater facility for infection of the organs more exposed than the kidneys, one must assume that the primary focus is in these organs thus directly exposed.

Of the 415 cases analyzed there were 122 deaths. Of these, about 40 per cent. were due to tuberculosis. Probably this figure should be much higher. Tuberculosis of the opposite kidney occurred in 5.7 per cent. The lungs were most frequently affected, and undoubtedly was the starting-point in the majority of cases.

In two nephrectomies death occurred in one instance seven years after the operation from tuberculosis of the opposite kidney, and in the other eight years after the operation from general tuberculosis. The most brilliant result was one of Czerny's cases, in which the patient remained well twenty-one years after the operation without any manifestation of tuberculosis in the meantime. Such a result is extremely rare. A patient operated on for tuberculosis of the kidney can never consider the future safe.

A comparison of the various operations shows some striking results. In nephrectomy the mortality was 17.4 per cent., while in nephrotomy it was 46.6 per cent. The percentage of cures in nephrotomy two years after the operation is only .56 per cent. The reason for the failure of nephrotomy is that a fistula persists, and this leads to a condition of sepsis, while we cannot be sure there is not present a tuberculous focus which may at any time give rise to tuberculosis elsewhere in the body.

Nephrotomy followed by nephrectomy has given relatively excellent results, and is recommended in patients with an abscess and when the general condition does not justify primary nephrectomy.

Resection of the kidney is condemned as a dangerous procedure. The renal tissue left behind is claimed to be unhealthy as determined by the test of its permeability with methylene blue, and it may contain foci of tuberculosis.

Ureterectomy with nephrectomy is the ideal operation, as it removes the whole focus of disease except that in the bladder. The final results are excellent. Complete recovery may result even when a ureter, known to be diseased, is abandoned, but the risks are great. The dangers are fistula, secondary abscess, persistence of a focus of infection, and continuance of the urinary symptoms.

The following conclusions are drawn:

(1) Tuberculosis is rarely, if ever, primary in the kidney, and the original focus is in some other organ in more direct contact with the external air in the majority of cases.

(2) The presence of a primary focus of disease in the body, even if the disease is thoroughly eradicated from the urinary tract, makes the ultimate prognosis in these cases doubtful at least.

(3) Such foci may remain permanently quiescent, but they may also become excited to activity by general low condition of the system or by causes unknown to us.

(4) Patients should be told of the danger as regards the future for them, and they should lead lives of the greatest regularity, with strict attention to hygiene. A change of climate is very beneficial in these cases.

(5) Reports of cures of long duration occur, but they have been few.

(6) Nephro-ureterectomy should be done in all cases in which the ureter is diseased and the patient's condition allows of it. The bladder should be subsequently treated if diseased.

(7) An abandoned tuberculous ureter is an especial source of danger on account of the great liability of subsequent tuberculosis.

(8) Nephrotomy alone should be rejected except as a preliminary to a later nephrectomy.

(9) Resection is not justifiable, for we can never be sure that the portion removed is the only portion diseased.

* * *

A Report on Tuberculin as a Means of Diagnosis. By J. D. Madison, M.D. *American Medicine,* December 20, 1902.

Madison reports his experience with tuberculin at Danvers Insane Hospital, and presents his results obtained in a series of 400 consecutive cases for two and one-half years. All patients admitted to the female wards at the hospital were given injections of tuberculin unless the condition of the patient rendered this impossible or undesirable. There was no selection of patients on account of suspected tuberculosis. The method used was as follows: The temperature was taken every four hours for two to five days before the injection was given. The injections were given about 8 P. M., and for the next twenty-four hours the temperature was taken every two hours. If there was no reaction from the first injection, a second one was given three days later. After this second injection the temperature was taken for three days or longer if it was found desirable. The routine was adopted of giving a first dose of 4 mg., followed, if necessary, by 7 mg. as the maximum dose. Koch's original tuberculin, imported from Germany, was used. A .5 per cent. carbolic-acid solution was made up so that each cubic centimeter contained 2 mg. of tuberculin, and this solution was made up fresh every three to five days. Injections were not given if the temperature for two days previous reached above 99.5° F. A rise of 2° F. during the following twenty-four hours was considered a temperature reaction.

Madison reports in some detail six cases with the autopsy findings, which may be summarized as follows: In the first case there was well-marked reaction to 10 mg. The autopsy revealed neither active nor any evidence of old tuberculosis. One cannot say, however, that no focus of tuberculosis was present, as a very small lesion might have escaped notice.

The following five cases showed no active tuberculosis, but each showed more or less evidence of old tuberculous foci, which may be considered healed tuberculosis. The eighth case was one of fibroid

tuberculosis. This case seems to lend support to the view that healed tuberculosis is capable of reaction. Not all cases of healed tuberculosis react, as several at autopsy showed old lesions, but did not react to the routine doses of tuberculin.

It is well established that cases of proved tuberculosis have not reacted to doses varying from 3 mg. to 10 mg. One finds in the literature reports of patients with tubercle bacilli in the sputum who did not react to such enormous doses as 24 mg. or even 30 mg. In these patients who failed to react the disease almost invariably has been far advanced, and represents only a small per cent. of the total number of cases.

Several writers claim to get reactions in non-tuberculous patients, but statements in regard to the per cent. of non-tuberculous or healthy patients who react, without post-mortem examinations, are unreliable. Tuberculous lesions are frequently associated with other diseases. There seems to be more reason to believe that syphilis and leprosy may be capable of reacting. It is well known that syphilis and tuberculosis are often associated. Only one case of syphilis which reacted is reported in which no evidence of tuberculosis was found at autopsy.

In regard to leprosy it is claimed that a local reaction is obtained in the tuberculous form of the disease. Here again, however, we have a disease frequently associated with tuberculosis, and the autopsies in the positive cases have always shown tuberculous foci. Many of the discrepancies in the statistics of various writers may be due to (1) the difference in the standard required as constituting a reaction; (2) the size of the dose given; (3) difference in the tuberculin used; (4) deterioration of the glycerine preparation of tuberculin itself. Madison's experience leads him to conclude that the glycerine preparation of tuberculin will deteriorate after several months, and earlier, if they have been opened. In twenty-two patients with positive signs failing to react with a fresh carbolic solution from bottles which had been opened from four to eight weeks the reaction was prompt to a preparation from a freshly-opened bottle. Madison thinks that delayed reactions are to be explained as due to the deterioration of the glycerine preparation.

The danger in the use of tuberculin in suitable cases is very slight. In no case was there permanent injury.

The following conclusions are drawn:

1. Patients may react to tuberculin, and no evidence of tuberculosis be found at autopsy, as shown by Case 1.

2. The six cases following seem to demonstrate that completely-healed tuberculosis may react.

3. Cases of proved tuberculosis may not react to the maximum dose.

4. The evidence is not conclusive that other diseases than tuberculosis may react to tuberculin.

5. The margin of error of the tuberculin test is considerable, and probably less than 10 per cent.

6. The maximum dose should be higher than 4 mg., and no more than 10 mg. Small increasing doses are not advisable, as the reaction is not so likely to be distinct on account of the tolerance which may be produced. An initial dose of 3 to 5 mg., followed by the maximum dose, is better.

7. The temperature should usually be normal before injections are given. When the temperature is distinctly above normal a negative result is of no value, as these patients will frequently not respond at all, even to large doses.

8. It seems quite certain that the glycerine extract of tuberculin deteriorates, and a fresh bottle should frequently be opened, care being taken to keep it in a cool, dark place. The .5 per cent. carbolic-acid solution should be taken on the day it is used if possible. I believe that deterioration of tuberculin is the principal factor in producing delayed reactions.

9. It cannot be said that tuberculin injections are entirely without ill effects, but their use among suitable patients is no more dangerous than the use of chloroform and ether for diagnostic purposes, and is quite as justifiable, as an early diagnosis of tuberculosis is of the greatest importance.

10. About 40 per cent. of all female patients admitted to the hospital react to tuberculin.

Society Reports.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

SECTION OF CLINICAL MEDICINE AND SURGERY.

MEETING HELD DECEMBER 5, 1902.

Portions of Stomach Tube Removed by Gastrotomy.—Dr. Julius Friedenwald showed portions of two tubes removed by operation from one patient by Dr. Finney and from another by Dr. Harris. No previous cases have been found on record in which fragments of tube were thus removed from the stomach. In one case reported by Leube, the tube had been swallowed and could be palpated in the stomach. It caused considerable fever and was suddenly vomited up one day, the patient feeling something in the throat and being able to grasp it with the fingers.

Dr. Finney remarked that he had done gastronomy for foreign bodies four times, twice for peachstones lodged low in the esophagus, and once for false teeth, in addition to the present instance. All the cases recovered promptly except in one of those in which a peachstone had been swallowed and where there developed a mediastinal abscess, it being impossible to say whether the abscess was due to the stone or to the effort to remove it. The abscess was readily drained by resection of a rib. The operation is practically without mortality.

Orthostatic Albuminuria, with the Report of a Case—Dr. Beck.—The case is that of a male, twenty-five years old, a cigarmaker, of a nervous and weak constitution. His father died of apoplexy. The patient has had diphtheria and nervous dyspepsia. For the past five years his work has kept him indoors. Alcohol and tobacco are used moderately. No history of syphilis. The patient is a sexual neurasthenic and has had a good deal of vertigo and palpitation. On being examined for life insurance, albumin was found in his urine and he was treated for seven months without benefit.

When first seen on May 15 his weight was 137 pounds; he was pale, of a sallow complexion and quite nervous. The chest and abdomen presented nothing abnormal, but the patient had symptoms of hyperacidity and constipation. Examination of the nervous system showed that his sensations were impaired. There was paresthesia in the lower abdomen and legs and the tendon reflexes were diminished. Red-blood count was 4,000,000. Urination was accompanied by burning, and the urine, of which two litres were passed in twenty-four hours, had a specific gravity of 1030, contained .7 per cent albumin and a few hyaline cases and pus-cells; This was after moderate exercise. On the following day two specimens were examined. The morning specimen was free from albumin. The evening specimen, examined after the patient had been standing half an hour, contained 1 per cent. of albumin. After sitting for two hours the urine was again free from albumin. The same result was obtained on repeated examination of specimens.

Outdoor life was prescribed under restricted proteid diet. He was also given tincture of nux vomica and syr. hypophosph. comp. After a month there was decided gain in the patient's general condition, but after standing an hour there was still 1 per cent. of albumin present. Hot and cold sponges and douches were now added to the treatment.

One month later the patient complained of fulness in the epigastrium. A test meal showed a total acidity of 80. The gastric distress was relieved by lavage. The patient has recently been seen and is practically cured of his trouble.

Of the thirty-six specimens of his urine examined, the average specific gravity was 1026. The urea averaged 2.45 per cent. Albumin was present in twelve of the specimens.

In a recent Paris thesis by Dr. Walter Vire this form of albuminuria, due to standing, is fully discussed. It occurs in young people without renal disease and was discovered by accident. No functional disorder could cause it. The prognosis is good. It is evidently due to fluctuation in the circulation of the kidney, probably to a vasomotor disturbance of the renal circulation. It is usually seen in nervous persons.

Dr. Osler: The reciprocal relations of neurasthenia and albuminuria are interesting. Transient albuminuria is frequently present in neurasthenics, and neurasthenia is often a consequence of albuminuria. In one case in this city, five minutes in an erect posture causes a trace of albumin in the urine. Even to sit up and eat breakfast in bed would cause the albumin to appear. We lay far too much stress on the mere presence

of albumin in the urine, when we should pay attention to the casts, the specific gravity, the state of the arteries and the pulse.

Dr. Pancoast: A series of cases of postural albuminuria was recently published by the late Dr. Hugee, in which he showed that the renal circulation was fluctuating in certain cases. In Dr. Beck's case albumin disappeared on sitting down, and its presence, was, therefore, not evidently altogether due to posture.

The Surgical Treatment of Facial Paralysis by Nerve Anastomoses—Dr. Cushing.—No injury of peripheral nerves is as distressing as that of the seventh cranial. It was known long ago that anastomoses could be made between nerves of similar character. Even the sympathetic and vagus have been anastomosed, and the peripheral portion of the vagus has taken up the peripheral work of the sympathetic. In 1898 Dr. Foa, at the suggestion of his assistant, attempted to suture the spinal accessory into the peripheral portion of the facial nerve, but was unsuccessful. Ciarelli, an Italian surgeon, did the same thing. Kennedy, in England, in a case of facial ataxia, divided the seventh nerve and sutured to it part of the eleventh. The patient made a good recovery.

The present case is a male, sent from Elkton with a gunshot wound in the mastoid process. The inner ear was destroyed. The blood was removed from the base of the skull. Six weeks after the injury an incision was made along the anterior border of the sterno-mastoid, the muscle was retracted, the eleventh nerve was divided, turned upward and sutured into the peripheral end of the divided seventh nerve. Recovery was rapid, and the patient first found that he could work his facial muscles by elevating his shoulders. He can now work them freely, independent of the shoulder; can close his eyes, and co-ordinate fairly well, although it is not easy to understand how he does this. If the cell-bodies of the nerves atrophy when their peripheral portions are destroyed, then the central portion of the seventh should have atrophied. The impulses probably travel, however, by commissural fibers, passing between the centers of the seventh and eleventh nerves, thus bringing about co-ordination.

The chief points to be observed in the technique of the operation is to avoid the handling of the nerves and to avoid scar tissue. In proportion as scar tissue is avoided, the result is improved.

Tuberculous Pericarditis—Dr. Thayer.—The patient is a male, thirty years old, a painter. Four months ago he had pleurisy without effusion on the left side, with pain and dyspnea. Two weeks ago he had pain in front of his chest, became faint and could not work. His dyspnea increased and there was slight swelling of the feet. The pulse is small and irregular. The precordium is bulging, dullness extending from the right nipple to the left axilla. There is also a large area of flatness. The left lung is tympanic throughout; there are a few rales at the apex. The heart sounds are distant; nothing is heard below the fifth rib. Aspiration was done, the needle being inserted 2 to 3 cm. inside the nipple line, 1250 cc. of fluid came out under pressure. During the tapping dyspnea disappeared, cardiac flatness returned to normal, but the triangular area of dullness remained. This was the condition on October 31.

When seen two weeks ago the patient's apex impulse was distinctly visible and there was no Broadbent's sign. The features of the case are (1) the amount of the effusion; (2) the rapid recovery.

In one of my cases 900 cc. were removed at each of two aspirations, and later 4000 cc. at the autopsy. In making the diagnosis Rotch's sign is to be noted, *i. e.* the flatness to the right of the sternum in the fifth interspace. Ewart's sign depends on the relative cardiac dullness, and consists in a change in the angle between the heart and the liver, the usual acute angle becoming obtuse.

There is but little danger of perforating the heart during aspiration. This has only been reported twice. If pus be present, incision and drainage must be done.

Dr. Osler: In a large number of cases which came to autopsy it was seen that the greatest bulging in pericarditis was in the left costoxiphoid angle. In one of my patients, a colored male, aspiration was done three times and tubercle bacilli were found in the fluid.

Dr. N. B. Foster briefly reviewed the eighteen cases which had come to autopsy at the Johns Hopkins Hospital. Thirteen of these were adults between fifty and eighty years of age. Infection almost always occurred by contiguity with the lungs and pleurae or the bronchial glands. There was frequent association with Pott's disease.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD DECEMBER 1, 1902.

Scrofuloderma.—Dr. Gilchrist showed a case of this disease, the patient being a colored girl who came to the hospital one month previously with lesions all over her body. Six months ago a number of deep-seated hard lumps appeared on the body suddenly. Some broke down, forming subcutaneous abscesses, which increased in size and continued hard. The growths are movable over the muscles. The smallest measured 2 to 3 cm. across. In addition there was a brown induration on the left thigh 8 cm. across. On the left forearm and on the body and legs there were irregular pigmented scars. There were thus three types of lesions—(1) deep-seated nodules, (2) subcutaneous abscesses, (3) scars. The tumors are not tender as are the abscesses, some of which have become superficially ulcerated. The patient gives no former history of tuberculosis, nor has she been exposed to tuberculous contagion. The diagnosis lies between some rare form of tuberculosis and syphilis. There is no history of gumma nor any definite evidence of syphilis. The glands are enlarged, as is frequently the case among negroes.

A guinea-pig inoculated with pus taken from the subcutaneous abscesses died on the twentieth day. Its peritoneum was filled with granulations, the mesenteric glands were caseous, and the liver showed fatty degeneration. In the inguinal glands and in scrapings from the peritoneum tubercle bacilli were found. The patient gave a positive tuberculin reaction. The case therefore clears up one of the groups of skin tuberculosis. The usually-

recognized forms are: (1) Lupus vulgaris. (2) Tuberculosis cutis, usually due to autoinoculation. (3) Tuberculosis verrucosa cutis, often seen in autopsy-rooms. (4) Lichen scrofulosorum, in which papules are seen around the hair follicles, clearing in the centers. (5) Erythema induratum scrofuleux, most frequently described by French writers. In the typical form hard patches appear, especially on the legs, with a tendency to break down and form punched-out ulcers. There may be a history of tuberculosis, but no other focus is found in the body. (6) Erythema elevatum diutinum.

The present case belongs in the fifth group, and serves to prove that lesions of this type are tuberculous. The old name, scrofuloderma, is not strictly applicable.

Blastomycetic Dermatitis—Dr. Gilchrist.—The patient is a colored male who five years ago noticed a small pimple on the abdomen. One month later a similar pimple appeared on the back. The tops of these pimples were rubbed off, and pus exuded. The lesion spread and became ulcerative without any tendency to heal. Other lesions appeared, one near the right nipple and one in the right groin. They at first looked like subcutaneous abscesses the size of an egg, and broke down and discharged sero-pus.

The lesion is papillomatous, most typical along the edges, which are abruptly sloping. On pressure, pus exudes from miliary abscesses situated between the papillae. The pus contains budding blastomycetes which are pathogenic to animals, especially to dogs, causing pseudo-tuberculosis of the lungs. The lesion is painless. Microscopical sections show hypertrophy of the epidermis, miliary abscesses containing blastomycetes, pseudo-tuberculosis of the corium, with masses of plasma cells.

Thirty-four cases of the affection have been reported, the majority of them by four or five writers in Chicago, the chief of these being Hyde and Montgomery. The culture looks like a mold, and at the end of a week looks like a fine white moss. It is very adherent to the medium. Many cases of tuberculosis of the skin have been mistaken for this disease. It may, however, be differentiated from tuberculosis (a) by its papillomatous nature, with abscess formation between the papillae; (b) by the presence of the organisms, which are twelve to fifteen inches in diameter. In the present case the glands are involved, which is quite unusual. At the suggestion of Bevan, KI has been tried in this case and has acted like a specific. The patient was treated here a year ago, and left the hospital markedly improved. He refused to stay until the lesion had been entirely healed.

Uncinariasis in Man—Dr. Thomas Boggs showed a male twenty-two years old from North Carolina, a farmer and teacher by occupation, who came here complaining of general weakness. One brother died three years ago with the diagnosis of pernicious anemia. Many of the inhabitants in that section of North Carolina are anemic. The patient had been anemic for years, being always much run down after the winter's teaching. He uses tobacco freely. In the spring of 1902 the patient had influenza, and after that was troubled with diarrhea, passing some mucus, but no blood. There was occasional nausea and vomiting. During the past year he has lost much in weight and strength. Since admission the patient has had an irregular temperature, running as high as 102°, but without chills or sweats. He has had two soft stools daily. He is moderately nourished, very anemic, but shows

no patches of pigment, nor is his skin of a waxy color. There is a soft systolic murmur at base of heart. The stool contains a larger number of the eggs of uncinaria Americana. The adult worm is 12 to 18 mm. in length, the female being somewhat larger. The head is recurved, and is armed with chitinous teeth, which wound the duodenum. It passes from place to place in the bowel, and each wound continues to bleed for a long time, so that there is a greater loss of blood after the bite than during the sucking of the worm.

Thirteen cases were found in the Washington Insane Asylum, one having lasted six years. The ova have to be differentiated only from those of the oxyuris, which are asymmetrical and flat. The egg of a lumbricoid is thick, shallow, and easy to distinguish.

Dr. Thayer remarked that this was the second case seen in Baltimore, one having been described post-mostem by Dr. Yates (*Johns Hopkins Hospital Bulletin,* 1901). It is strange that we have been so slow in recognizing uncinariasis, for strongyloid worms are comparatively frequent, and the two may occur together. The eggs alone of the unciniaria appear in stools, while only the living embryos of the strongyloides appear there, the two kinds of eggs being very similar, but hatching very differently. Of the four cases of strongyloides seen in this hospital, three cames from Maryland and one from Virginia. Uncinariasis, which is the more serious of the two diseases, is readily treated with male fern or thymol. Strongyloides, however, are hard to expel. but they may cause no serious symptoms.

Dr. Futcher: Since the publication of Dr. Stiles' pamphlet on uncinariasis he has been studying the disease in the South, and has seen many additional cases. He proves these parasites to be the commonest cause of severe anemia in the South, more common even than malarial anemia. In one of Dr. Herrick's cases the eosinophiles numbered 26 per cent.

Arteritis and Arterial Thrombosis in Typhoid Fever—Dr. Thayer.—These complications have long been recognized in France. The first case is that of a male, twenty-two years old, of strong constitution, who on the ninth day of his illness had general convulsions and became unconscious. After the convulsions he was clear. After four hours the convulsions recurred and continued at intervals for six hours. The convulsions were more marked on the right, and there was conjugate deviation of the eye up and to the left. At the autopsy hemorrhagic enteritis was found. Pure cultures of B. typhosus were obtained. There was thrombosis of the temporal and parietal branches of the middle cerebral artery, and meningitis and arteritis in the region of the occluded vessels. The arteritis was evidently primary, and the thrombosis was probably agglutinative, as has been described by Flexner.

The second case was that of a female, sixteen years old, who was admitted to the hospital on June 16, 1902, on the fifth day of her illness. She was delirious from the onset. On the eighth day there was consolidation at the left apex, and on the eleventh day at the right apex. On the fourteenth day she became better, but it was noticed that the right foot and leg up to the knee were quite cold after the tub bath. There was no swelling. Two hours later purplish mottling appeared in these parts, and arterial pulsations were not felt below the knee. The leg and thigh were greatly swollen, and an irregular line of demarcation could be made out between the healthy and

gangrenous tissue. The patient died on the twenty-second day after delirium. The heart-sounds were clear. No pulse could be felt below the middle thigh.

The third case is that of a male, eighteen years old, admitted on the third day of his illness. On the fourteenth day he had pain on the inner side of his left thigh, and the region was found to be tender, but no cordlike feeling could be made out in the saphenous vein. Two days later the left leg became swollen, and the foot was cold, pulsation having ceased. Tenderness developed along the vessels. The symptoms gradually improved until the forty-ninth day, when the tenderness recurred, and the pulsation of the tibial vessels could be partly felt. There was edema of the ankles. On the seventy-ninth day the patient left the hospital well.

The fourth case is that of a female, twenty-seven years old, a teacher, admitted on the thirteenth day of her illness. On the twentieth day she had a hemorrhage from the bowels, pain at the bend of the left elbow, with swelling and tenderness over the brachial artery. The left hand became cold. Gradually, however, the patient improved.

The fifth case is that of a male, eight years old, seen in the fifth week of his illness by Dr. Walter Stiner of Hartford, who has kindly given me the notes of the case. The patient had a pain in the fingers of his right hand, radiating up the arm. The brachial artery was tender, pulseless and cordlike. Dr. Janeway saw the case and expected gangrene to occur. The patient, however, recovered.

Gangrene of the extremities in typhoid fever was first noticed in 1806. In 1859 it was suggested that it might be due to changes in the blood-vessels, and in 1863 it was shown that tenderness preceded the thrombosis. Probably arteritis precedes the thrombosis in every case and causes it, although there may be post-thrombic changes in the vessels themselves. This view is confirmed by the literature of the past forty years. To account for the healing which has followed the condition of pulselessness in some of the cases it is suggested that the pulse was merely not felt. As to the cause of the arterial changes, we suppose that infection is localized in the artery walls as in the case of veins. The relation of the arteritis to the thrombosis is not always the same. In one of the cases here reported the thrombosis was evidently agglutinative, and may have caused the arteritis.

To sum up, typhoid arteritis presents a well-recognized symptom—complex, occurring late in the disease. There are pain and tenderness along the large arteries, especially of the leg. The vessels are pulseless and the part quite cyanotic. The outcome is either a true gangrene or complete recovery. An acute arteritis may be the cause of obscure cases of aphasia and paralysis.

Perforation of the Colon—Operation—Recovery—Dr. T. S. Cullen.—The patient, a colored servant girl, complained of pain at 7.30 one evening, and was seen by the family physician at 9 o'clock and given morphine. Blood examination showed a leucocytosis, but no excess of eosinophiles. At 11 P. M. the patient was in fairly good condition, and operation was decided upon, a diagnosis of early appendicitis having been made. On opening the abdomen at 1.30 the pelvis was found full of pus, but without evidence of appendicitis. The ileo-cecal valve was perfect, the cecum was obliterated, and just distal to it the caliber of the colon was reduced in size to that of a

small birdshot. Such a shot was actually found occupying the lumen and practically obliterated it. Just distal to this a perforation was found in the ascending colon. Eight inches of colon were resected, including the perforation and the point of narrowing. The patient is doing well. Histological study shows that the constriction was due to tuberculosis.

Adenomyomata of the Uterus—Dr. Cullen showed a number of lantern slides demonstrating the origin of the glandular tissue in adenomyomata. V. Recklinghausen proved that the glandular tissue originated in the remains of the Wolffian duct. The lantern slides made it clear, however, that it had its origin in the glands of the uterine mucosa.

A study of the nineteen cases which have occurred in this hospital made it possible to trace the connection between the glands in the adenomyomatous tissue.

Book Reviews.

Diseases of the Pancreas and Their Surgical Treatment. By A. W. Mayo Robson, F.R.S.S., and B. G. A. Moynihan, M.S. (London), F.R.C.S. Philadelphia and London: W. B. Saunders & Co. 1903.

The interest at present accorded to diseases of the pancreas is shown by the frequency with which the subject has been recently assigned for discussion by various medical associations. The coming Congress of American Physicians and Surgeons, to meet in Washington, will give an entire session to the subject. Further evidence of this interest is furnished by the appearance of the work of Mayo Robson and Moynihan, devoted particularly to the surgical aspect of diseases of the pancreas. The book, which is printed in attractive form, is dedicated to the surgeons of America.

A chapter is given to the anatomy of the gland, and is followed by a review of the experimental, and in part clinical, studies undertaken to establish the relation of the organ to carbohydrate metabolism. Throughout the work the authors have made use of the abundant clinical material which has come under their own observation, and at the same time cite numerous cases from the literature of pancreatic disease. The relation of chronic pancreatitis to cholelithiasis has received especial attention. Mayo Robson has in previous publications emphasized the frequency with which gallstones in the common bile duct are associated with such induration of the pancreas that the diagnosis of malignant disease is made at operation. Of twenty-four cases in which this condition was recognized, all save one recovered.

It seems that the writers give undue importance to the symptomatology and treatment of the associated chronic interstitial pancreatitis which in great part at least are those of the primary cholelithiasis.

It is unfortunate that the term subacute has been introduced into the classification of inflammations affecting the gland. The classical terms suppurative pancreatitis, hemorrhagic pancreatitis, and gangrenous pancreatitis, a late stage of hemorrhagic lesion, represent well-defined pathological changes. The term subacute has been used to designate those cases which do not terminate within a few days and is not applicable to any readily-definable lesion.

The book in large measure fulfils the purpose of the writers—to review the work of the past and to point out the need of further advance.

PROGRESS IN MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Volume IV. December, 1902. Diseases of Digestive Tract and Allied Organs, Liver, Pancreas, and Peritoneum; Anesthetics, Fractures, Dislocations, Amputations, Surgery of the Extremities, and Orthopedics; Genito-Urinary Diseases, Diseases of the Kidneys, Physiology, Hygiene. Philadelphia and New York: Lea Bros. & Co. 1902.

This volume very worthily completes the series for 1902. The first article, on diseases of the digestive tract and allied organs, is by Max Einhorn.

The second part of the book is devoted to surgical subjects, and is by Joseph C. Bloodgood of Baltimore, covering, in 110 pages, surgical shock, fractures, dislocations, anesthetics, surgery of the extremities, and orthopedics. There is a brief article by Wm. T. Belfield on Genito-urinary diseases, and a more extended one by John Ross Bradford on diseases of the kidneys.

In an article on physiology by Albert P. Brubaker the first fourteen pages are devoted to a review of the literature on the physiological effects of ions. Recent advances in hygiene are considered in a 40-page chapter by Charles Harrington.

The volume concludes with a Practical Therapeutic Referendum, in which the newer remedial agents are considered in alphabetical order by E. Q. Thornton.

DISEASES OF THE BRONCHI AND PLEURA; PNEUMONIA. Diseases of the Bronchi. By Dr. F. A. Hoffmann of Leipsic. Diseases of the Pleura. By Dr. O. Rosenbach of Berlin. Pneumonia. By Dr. F. Aufrecht of Magdeburg. Edited, with additions, by John H. Musser, M.D., Professor of Clinical Medicine, University of Pennsylvania. Handsome octavo volume of 1030 pages, illustrated, including 7 full-page colored lithographic plates. Cloth, $5 net; half-morocco, $6 net. Philadelphia and London: W. B. Saunders & Co. 1902.

The fourth volume of the American edition of Nothnagel's Practice is fully as satisfactory as the preceding three volumes of this series; in fact, the various articles are practically monographs, and leave but little, if anything, to be desired as regards fullness and clearness of presentation. The new matter incorporated in the American edition includes addition to the material of the anatomy and physiology of the bronchi, on foreign bodies in the tubes, on bronchitis and bronchiectasis, on eosinophilia in asthma, on the blood and urine in pneumonia, on the bacteriology of pleurisy, on the *x*-ray diagnosis of pulmonary and pleuritic diseases, on the leucocytes of pleurisy, and on the Litten phenomenon. The work is so well known in its German form that little need be said in its praise. However, no review of the book would be possible without demonstrating to the reviewer the real value of the work, especially to those who delve deeply into the science and art of medicine. B.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially-Prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose and Throat, and other topics of interest to students and practitioners by leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.D., and others.

This is the fourth volume of the twelfth series of this well-known publication. It contains twenty-three short articles, among which we may mention as of particular interest to the reviewer that of Charles Fox Gardiner, describing his sanatory tent for the use of consumptives; a paper on the treatment of aneurisms by gelatine injections by E. Lanceraux; the report of a case of pernicious anemia, with extensive pigmentary changes in the skin, by the late Frederick A. Packard; J. N. Hall's short article on the clinical significance of scars and marks; a lecture by J. A. Bodine on fright as a cause of death in chloroform narcosis and mental preoccupation as a preliminary to general anesthesia.

The volume concludes with a very good monograph of 100 pages on "The Blood in Health and Disease, with a Review of the Recent Important Work on this Subject," by Thomas R. Brown of Baltimore.

A TEXT-BOOK OF DISEASES OF THE EYE. A Handbook of Ophthalmic Practice for Students and Practitioners. By G. E. De Schweinitz, A.M., M.D., Professor of Ophthalmology in the University of Pennsylvania, etc. Fourth edition, revised, enlarged and entirely reset. Octavo volume of 773 pages, with 280 text illustrations and 6 chromo-lithographic plates. Cloth, $5 net; sheep or half-morocco, $6 net.

There is no better text-book on the diseases of the eye for the use of students than this excellent one before us. Dr. De Schweinitz's experience as a teacher has well fitted him for the preparation of such a work. He has evidently seen and appreciated the needs of the student, and was possessed of the ability to supply what was wanted. Each and every topic is treated in a masterly manner. We have praised the previous editions so highly that there is little to be added now except that the same high standard has been maintained both by author and publisher, and that the revision of the old matter and introduction here of all that is new and good in ophthalmology make this the best of the number. We might especially commend the more thorough consideration given to affections of the cornea and the better illustration of this volume. H. O. R.

New Books.

LIST OF NEW BOOKS IN FRICK COLLECTION AND GENERAL LIBRARY OF THE MEDICAL AND CHIRURGICAL FACULTY.

	DATE.
Ballantyne, J. W., Manual of Antenatal Pathology and Hygiene.....	1902
Bowditch, H. I., Life of, by his Son. Two vols.....	1902
Brouardel, P., and Benham, F. L., Death, and Sudden Death, 2d ed...	1902
Bunge, G., Text-Book of Physiological and Pathological Chemistry, 2d Eng. ed.....	1902

Butler, G. R., The Diagnostics of Internal Medicine..... 1902
Cathell, D. W., Book on the Physician Himself, 11th ed., rev..... 1902
Chapin, H. D., The Theory and Practice of Infant Feeding..... 1902
Chase, R. H., General Paresis, Practical and Chemical..... 1902
Corfield, W. H., The Etiology of Typhoid Fever..... 1902
Cullingsworth, C. J., Clinical Illustrations of Diseases of the Fallopian Tubes, 3d ed..... 1902
Danvers, H., Spring Catarrh of the Eyes..... 1901
Deaver, J. B., Surgical Anatomy. Vol. III..... 1903
Defenderf, A. R., Clinical Psychiatry..... 1902
Frenkel, H. S., The Treatment of Tabetic Ataxia..... 1902
Gant, S. G., Diseases of the Rectum and Anus, 2d ed., enl..... 1902
Garrigues, H. J., A Text-Book of the Diseases of Women, 3d ed., rev. 1902
Goodhart, J. F., The Diseases of Children, 7th ed..... 1902
Grayson, C. P., Diseases of the Nose, Throat, and Ear..... 1902
Hemmeter, J. C., Contributions to the Science of Medicine..... 1902
Hemmeter, J. C., Diseases of the Intestines. Vol. II..... 1902
Herman, G. E., Difficult Labor, new ed., rev..... 1902
Herring, A. P., An Illustrated Manual of the Nervous System..... 1902
Hewlett, R. T., A Manual of Bacteriology, Clinical and Applied, 2d ed. 1902
Hirst, B. C., A Text-Book of Obstetrics, 3d ed., rev..... 1902
Hughes, A. W., A Manual of Practical Anatomy. Three vols....1901-1902
Jennings, O., On the Cure of the Morphia Habit, 2d ed., rev..... 1901
Keay, J. H., The Medical Treatment of Gallstones..... 1902
Kelsey, C. B., The Surgery of the Rectum, 6th ed..... 1902
Lefevre, E., Physical Diagnosis..... 1902
Morris, H., ed., Human Anatomy, 3d ed., rev..... 1902
Morton, H. H., Genito-Urinary Diseases and Syphilis..... 1902
Oliver, G., Contribution to the Study of Blood and Blood-Pressure.. 1901
Pasteur, L., Life, by R. Vallery-Radot. Two vols..... 1902
Reid, G. A., Alcoholism: A Study in Heredity..... 1902
Rosenau, M. J., Disinfection and Disinfectants..... 1902
Schofield, A. T., The Force of Mind..... 1902
Scudder, C. L., The Treatment of Fractures, 3d ed., rev..... 1902
Sedgwick, W. T., Principles of Sanitary Science..... 1902
Spoffard, A. R., and Annandale, C., eds., Twentieth-Century Encyclopedia. Eight vols..... 1902
Stelwagon, H. W., Treatise on Diseases of the Skin..... 1902
Szymonowicz, L., A Text-Book of Histology and Microscopic Anatomy 1902
Thomson, H. C., Acute Dilatation of the Stomach..... 1902
Thorne, W. Bezly, The Schott Methods of the Treatment of Chronic Diseases of the Heart, 4th ed..... 1902
Trübner, K., ed., Minerva. *Jahrbuch der gelehrten Welt*.....1901-1902
Turner, D., A Manual of Practical Medical Electricity, 3d ed., rev... 1902
Turner, J., The Physiology of the Human Body..... 1902
Vaughan, V. C., and Novy, F. G., Cellular Toxins, 4th ed., rev..... 1902

MARYLAND MEDICAL JOURNAL.

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BALTIMORE, MARCH, 1903

TYPHOID FEVER IN 1903.

TYPHOID was unusually active in 1902, and the present year promises yet more extensive prevalence. Several American cities are now suffering outbreaks of typhoid which appear the more remarkable when the season is considered. City councils are spending, or preparing to expend, large amounts of money on improved water supply. Ithaca, N. Y., has an epidemic which exceeds the hospital accommodations. Eighteen students of Cornell have died of typhoid, and the university trustees have offered to equip the city with a filtration plant at a cost of $150,000. If this is a good investment for the university (as it undoubtedly is), why has the city of Ithaca not heretofore seen the advantage of such a public work?

Typhoid fever is an energetic reformer, but has not so far made much impression upon the rulers of American cities, who, as a class, seek pretexts rather than reasons for spending public money.

If our great cities should acquire water supplies of such average excellence as those of the chief German cities, 80 or 90 per cent. of their typhoid mortality would disapppear, but this great saving, when estimated upon the total population of the country, would sorely disappoint enthusiastic people. In Maryland, half of whose population lives in Baltimore city, the profit to the State would be less than 25 per cent. of the present annual typhoid mortality if the city mortality from typhoid should be reduced 90 per cent.

In many other States the excessive incidence of typhoid upon the rural population would probably be found equally striking. The typhoid death-rate per 1000 of population is, according to the twelfth census, but slightly higher in the rural than in the urban population. But when we analyze the returns for the relative rank of typhoid among causes of death we find that in any given number of deaths from known causes the deaths from typhoid in rural districts are to the deaths from typhoid in cities as 41 is to 25. Two considerations go to show that the preponderance of rural typhoid is really much higher than this ratio indicates. The census population classed as urban includes many cities having populations of 8000 and upwards whose conditions with respect to water supply and disposal of waste are precisely those of rural districts. Moreover, the defectiveness of the census returns of mortality for the rural districts exceeds the error of mortality returns for cities.

The conclusions of these observations is that typhoid fever is country-bred. It makes large demonstrations when it comes to town, but its steady business is done outside the hurly-burly. The outlook for a year of excessive typhoid mortality is at present very good, and an effective defense cannot be made without attacking typhoid where it lives—in the country.

TYPHOID AND MALARIA.

The filtration of public water supplies is undoubtedly an effectual defense against typhoid fever in cities, but it is a round-about mode of dealing with the disease. The direct methods employed in the presence of other diseases whose infective materials leave the body by known routes would be just as successful against typhoid fever but for a circumstance which has often been remarked upon as discreditable to the profession. In the diagnosis of typhoid fever the American physician is a habitual defaulter. Not only is the diagnosis of frank typhoid remarkably tardy, but more than one-third of the fatal cases pursuing their ordinary course pass unrecognized, and are certified as due to some other cause.

One may find in the mortality returns of the census fourteen different names for continued fevers alleged to have caused a great number of deaths, and many of these causes are returned in conjunction with accessory causes which are quite familiar as complications of typhoid fever. But there is a fifteenth alleged cause of death in the United States which far outranks the other fourteen as an index of faulty diagnosis. Malaria is charged in our mortality bills with half as many deaths as typhoid fever. The seasonal curves of the two causes correspond closely. Whenever and wherever the mortality curve of one of these diseases shows a variation from the normal, the curve of the other misbehaves in the same way. No part of the country is free from a reported mortality due to malaria, though there are large areas in the United States where malaria does not exist.

In some parts of the South the mortality ascribed to malaria exceeds that charged to typhoid. The experience of 1898 showed that while malaria was a considerable cause of disability among soldiers in Southern encampments, it did not figure appreciably in the mortality. Nearly all the cases sent to division hospitals with the diagnosis of malaria proved to be cases of typhoid fever. It would not be fair to conclude from the army experience that there is no considerable mortality from malaria in the South, or that very much the larger part of the imputed malarial mortality of the South should be charged to typhoid fever. But one may safely say that of the reported malaria mortality of the country nineteen-twentieths are due to other causes than malaria. The default of regimental surgeons in the diagnosis of typhoid fever in 1898 amounted to 49.75 per cent. The default of practicing physicians the country over is probably not less than this, and where malaria really prevails the error may be greater.

There is reason for believing that in certain parts of Maryland the recognized cases of typhoid are less than one-half the number actually occurring.

A disease which is spread by incubating, convalescent, and ambulant cases, and which escapes diagnosis in 50 per cent. of bedridden cases, does not offer a good prospect of successful control by bedside hygiene.

OYSTERS AND TYPHOID.

The oyster has been of late making demonstrations upon a large scale of its importance as a carrier of typhoid fever. In this country it has been held responsible for a recent large and prolonged outbreak of typhoid fever at

Atlantic City. In England the infected bivalve has done so much damage that prudent people have for the time ceased eating oysters, inasmuch that the oyster trade has found it necessary to take concerted action on the subject. At first efforts were made to represent the extent of the oyster contamination as very slight, but the trade has been obliged to concede the pollution of one bed after another, until at last the oyster has a reputation so evil that legislative action is sought to rid the beds of pollution and to restore the oyster to popular favor.

The oyster trade wants to prohibit the discharge of crude sewage into tidal waters—a very one-sided proposition when the importance of the oyster trade is compared with the cost of so extensive a curtailment of the right of cities to commit nuisance.

According to the *British Medical Journal* one of two remedies proposed in Parliament will be applied. Either the local authorities will be authorized to examine the beds and to prevent the sale of oysters from contaminated beds, or else local authorities willl be empowered to prohibit the importation of shellfish known to be capable of producing disease.

The first-named remedy places the responsibility of certifying the hygienic condition of oyster beds upon the same authority by whose act, default or sufferance the beds may be polluted. The second remedy is not to be applied until the disease-producing power of the oysters has been shown, and leaves the whole burden of defense upon the oyster planter.

THE JUICE OF A LEMON.

Dr. Asa Ferguson's announcement that lemon juice is fatal to typhoid bacillus reached the Chicago Health Department just as the *Bulletin* was going to press. The news was highly important, and to an outsider the ensuing half hour would have seemed exciting. The chief pressed several buttons. His subservients trooped in and heard the news. Every man knew what was expected of him. The hour was very late. Ten plunks were offered for a lemon within ten minutes. There were five starters. The foreman brought his page proofs, and the chief "hung up" 200 words about influenza. A bacteriologist distated an account of the experiments of the Chicago Health Department upon the bactericidal power of lemon juice. Another bacteriologist dictated two opposite accounts of the results of these experiments, each with its appropriate conclusions. In six and a-half minutes all this copy was in the composing-room. In seven minutes a lemon arrived, and the scene of activity was transferred to the laboratory, leaving the chief in the tranquillity of his sanctum. The new proof was brought to his desk. He read half and sent it upstairs, retaining the remainder. In a few minutes a buzzer sounded—one buzz. This meant *confirmation.* The chief surrounded half of the bit of proof with a blue mark, and wrote in the margin "kill," and handed the proof to a copy-boy. Then he put on his hat and overcoat and departed. The bacteriologist came in presently, dressed for the street. He glanced into his assignment box. It contained the influenza article, and at the bottom was written a new subtitle: "Concerning the Behavior of the Pfeiffer Bacillus in the Presence of Gin Fizz. (Make it popular,—A. R.)"

Medical Items.

On February 1 Dr. Henry Helfrich of Allentown, Pa., died at the great age of ninety-nine years and seven months.

Dr. Samuel Gray of Laurel, Md., died on January 30, aged seventy-two years. He graduated from the University of Maryland in 1858.

The Jefferson Medical College and Hospital has offered a free course of lectures on first aid to the injured to the employes of the railroads entering Philadelphia.

The school board of Chicago proposes to require all teachers suspected of having tuberculosis to submit to medical examination before continuing their work.

The Baltimore University has been sued for $10,000 damages alleged to have been done to neighboring property by the anatomical department of the medical school.

Senator Hansbrough has introduced a bill requiring the notification of measles, chickenpox, whooping-cough and epidemic cerebrospinal meningitis in the District of Columbia.

The Pennsylvania Society for the Prevention of Tuberculosis will try to extend its membership so far as to organize a systematic campaign against tuberculosis throughout the State.

Just at present it is pleasant to think of New Orleans in the month of May. The Southern Railway offers those attending the American Medical Association the round-trip ticket for one full fare.

The Church Home and Infirmary is a beneficiary under the will of Mrs. Margaret M. Smith, who bequeathed $4000 to endow a bed in memory of Charles Fisher Smith. Mrs. Smith also left $1000 to the Home for Incurables.

Dr. Morrill Wyman died in Boston on January 30 at the age of ninety-one years. Dr. Wyman was esteemed one of the foremost medical practitioners of the State of Massachusetts during more than two generations.

The appropriation for a municipal hospital for Washington, D. C., has been stricken out of the appropriation bill. Other cities besides Baltimore have their troubles concerning hospital accommodations for infectious diseases.

The city council of Wilmington, Del., has passed an ordinance forbidding the sale of opium or cocaine except upon physicians' prescriptions. The habit of using these drugs is said to be spreading, particularly among young men and boys.

Dr. Wm. T. Riddlemoser of Smithsburg, Washington county, Maryland, died at his home on February 18 of tubercular meningitis. Dr. Riddlemoser was a graduate of the College of Physicians and Surgeons, Baltimore, 1882, and was forty-three years of age.

The Pennsylvania legislature has repealed the law which forbade the erection of hospitals in the more densely parts of cities. This action will allow the benefaction of Mr. Henry Phipps to be carried out in Philadelphia in accordance with Mr. Phipps' ideas.

Philadelphia has acquired a site for the municipal hospital. It is a tract of land situated in the thirty-third ward, fifty-eight acres in extent, and known as the Macalester Farm. The price paid was $116,000. The work of building will begin in a few weeks.

Dr. J. Wm. Funck announces that he has removed his residence to 1631 Eutaw Place, corner of Wilson street, where he may be consulted between 12 M. and 2 P. M., and at other hours by appointment. The office at 101 North Fulton avenue will be continued. Consultation hours 8 to 10 A. M., and 7 to 8 P. M.

Dr. Thomas A. Councell of Easton, Md., died of Bright's disease at the City Hospital, Baltimore, on February 18, aged thirty-two years. Dr. Councell was a native of Talbot county, Maryland, and a graduate of the College of Physicians and Surgeons, Baltimore. From 1896 to 1900 Dr. Councell was health officer for Talbot county.

The Medico-Chirurgical Hospital in Philadelphia was seriously damaged on February 12 by the explosion of a boiler in the basement. No one was seriously hurt, but it is possible that the building may have to be torn down. There was no insurance against loss from this cause. The trustees have made an appeal to the public for aid.

Dr. Herman Mynter of Buffalo died on February 8. Dr. Mynter was born in Copenhagen, and graduated at the University of Copenhagen in 1871. He made an enviable reputation as a surgeon in the United States, and was a frequent contributor to the literature. He was one of the surgeons in attendance upon the late President McKinley.

Four vaccine physicians of the New York City Department of Health have been dismissed for making false returns of vaccination. The vaccine physicians make weekly returns of the names and addresses of persons vaccinated during each week. Inspectors are sent at intervals over the routes of the vaccine physicians, and in this way the fraudulent returns were discovered.

The Craig Colony prize of $200 has been awarded to Dr. Julius Donath of Budapest, Hungary, for his paper on "The Presence of Cholin in Epilepsy, and Its Significance in the Production of the Convulsive Attack." A prize of the same amount is offered for this year, the essays to be sent before September 30 to Dr. Frederick Peterson, 4 West Fiftieth street, New York city.

Tne Pennsylvania Society for the Prevention of Tuberculosis has a bill in the Pennsylvania legislature asking for $500,000 for building sanatoriums. The sites are to be selected by a commission of three to be appointed by the governor, and are to be found in the State forestry preserves, one in the Pocono region, Lackawanna county, and the other Franklin county, near Palo Alto.

Dr. Simon Flexner, professor of pathology in the University of Pennsylvania, is to be the chief of the resident staff of the new Rockefeller Hospital for Medical Research. The Rockefeller research laboratories are to occupy three blocks in New York city from 64th to 67th streets, and from Avenue A to the East river. The price of this site is said to have been $700,000.

The suit against Gilbert Bros. of Baltimore, wholesale druggists, for damages alleged to have been suffered from the use of essence of Jamaica ginger, fraudulently made up with wood alcohol, has attracted the interest of physicians. The plaintiff, Brehm, became blind shortly after drinking a quantity of Gilbert Bros.' essence of Jamaica ginger. The trial was a contest of experts, medical and chemical. The result was a disagreement of the jury.

The *Medical Library and Historical Journal* is the title of a new quarterly publication, the official organ of the Association of Medical Librarians. It is published in Brooklyn, and is edited by Drs. Albert Tracy Huntington and John Smart Brownne. The first number is most attractive both in form and contents. Among the original articles is one by Dr. E. F. Cordell of Baltimore on "The Medicine and Doctors of Juveenal."

The Charity Organization Society of New York has of late been annoyed by the claims of quack medicine concerns that certain remedies and modes of cure for consumption were recommended by the society's committee on tuberculosis. The society therefore publicly proclaims the falsity of all such claims, and declares its belief that "no cure of consumption" can be expected from any kind of medicine or method except the regular treatment, which relies mainly upon pure air and nourishing food.

Mrs. Ella G. Crim, the widow of the late Dr. Wm. H. Crim, died on February 11. Under the will of Mrs. Crim the University of Maryland School of Medicine is made residuary legatee. After the death of the immediate beneficiaries, five other beneficiaries are to receive $5000 each absolutely. Among the latter Dr. John G. Jay is named. The residue is then devised to the University of Maryland, to be used in founding a professorship to be known as the Dr. Wm. H. Crim professorship. The balance above what is necessary to found the professorship is to establish scholarships in medicine.

Dr. John Morris died in the City Hospital, Baltimore, on January 29, aged seventy-nine years. Dr. Morris was born in Lancaster county, Pennsylvania, on February 6, 1824. In 1841 he came to Maryland and taught in the public schools of Baltimore county. He took up the study of medicine, and attended his first course of lectures at Washington College, on North Broadway. In 1848 he entered the office of Dr. Frederick Hintze, and in the same year was admitted to the practice of medicine by the examining board of the Medical and Chirurgical Faculty. He was afterwards graduated from Bellevue Hospital Medical College, New York, and became an interne at the Rotunda Hospital, Dublin, Ireland. In 1851 Dr. Morris was elected to the State legislature, and served through the long terms of 1852 and 1853. In 1855, during the epidemic of yellow fever at Norfolk, Va., Dr. Morris volunteered his services to the stricken city. He had a severe attack of the disease. The citizens of Norfolk presented him a gold medal in recognition of his services. During President Buchanan's administration Dr. Morris was postmaster of Baltimore. In 1888 he was president of the Medical and Chirurgical Faculty. He was a member of the State Board of Health from 1876 to the time of his death, and was for several years the president of the State Lunacy Commission.

SUMMARY OF RESULTS OF EXAMINATION HELD BY THE BOARD OF MEDICAL EXAMINERS OF MD., JUNE 11, 12, 13, 14, 1902.

Number	College of Graduation.	Anatomy	Surgery	Pathology	Obstetrics	Practice	Chemistry	Materia Medica and Therapeutics	Physiology	Total	Average
*1	Medical Department Johns Hopkins	80	..	..	..	..	35	64	90	269	....
2	University of Maryland	75	70	40	85	77	46	82	64	539	67⅜
3	University of Maryland	50	55	25	80	72	33	78	67	450	56¼
*4	University of Maryland	85	..	..	..	..	85	87	75	332	...
5	University of Maryland	25	95	52	90	72	44	80	73	491	61⅜
6	Jefferson Medical College	75	90	35	85	81	90	78	84	618	78½
*7	College of Physicians and Surgeons, Balto.	75	..	..	..	..	63	52	80	190	....
8	University of Maryland	75	88	56	80	91	62	79	72	603	75⅛
9	Baltimore Medical College	78	90	17	75	57	74	72	64	697	62⅛
10	College of Physicians and Surgeons, Balto.	90	80	80	90	89	79	87	94	689	86⅛
11	College of Physicians and Surgeons, Balto.	100	80	88	90	86	97	90	99	730	91¼
12	University of Maryland	90	80	37	85	80	69	83	90	614	78
13	University of Maryland	100	85	40	85	85	83	90	100	668	83½
14	Baltimore Medical College	86	80	55	80	86	40	80	69	576	72
15	Howard University	60	70	45	90	71	49	79	54	518	64⅜
16	Jefferson Medical College	78	85	60	95	85	62	69	87	621	77⅝
17	University of Maryland	100	75	63	75	91	89	87	89	669	83⅜
18	Baltimore University School of Medicine	45	75	30	40	80	63	80	37	450	56¼
*19	Medical Department Johns Hopkins	85	..	..	..	..	78	75	87	325	....
20	Medical Department Johns Hopkins	85	95	60	90	89	94	90	92	695	86⅜
21	University of Maryland	95	95	65	90	94	88	95	99	721	90⅛
22	University of Maryland	100	75	51	60	82	83	92	87	630	77½
23	Maryland Medical College	70	75	36	80	59	56	79	55	510	63¾
24	Niagara Medical College	70	90	31	70	79	84	75	59	558	69¾
25	College of Physicians and Surgeons, Balto	75	85	55	85	71	74	75	80	600	75
*26	College of Physicians and Surgeons, Balto.	78	..	..	..	..	71	84	97	330	....
27	University of Maryland	85	80	31	85	83	92	84	94	634	79¼
*28	University of Maryland	100	..	..	..	..	93	84	92	269	....
*29	College of Physicians and Surgeons, Balto.	80	..	..	..	..	57	68	75	280	....
30	Leonard Medical College	80	80	43	80	81	75	69	92	600	75
31	College of Physicians and Surgeons, Balto.	75	80	63	90	79	79	80	90	636	79½
32	Medical Department Johns Hopkins	80	90	76	80	81	71	77	82	637	79⅝
33	Woman's Medical College of Baltimore	90	95	80	95	93	89	94	90	727	90¾
34	University of Maryland	85	80	35	85	76	86	85	75	607	75⅞
35	University of Maryland	70	80	55	80	86	83	89	87	630	78¾
36	University of Maryland	100	90	77	95	98	95	92	92	739	92⅜
37	University of Maryland	50	80	25	85	79	55	85	87	546	68¼
38	Maryland Medical College	70	75	37	75	71	38	75	82	523	65⅜
39	College of Physicians and Surgeons, Balto.	75	85	66	80	91	88	80	90	655	81⅜
40	Baltimore Medical College	100	80	44	95	87	75	75	80	636	78½
41	Medical Department Johns Hopkins	70	85	68	90	89	87	77	90	656	82
42	Baltimore Medical College	85	80	66	80	90	84	84	87	656	82
43	University of Maryland	75	95	95	90	99	90	90	97	731	91⅜
44	University of Maryland	95	90	73	95	95	85	97	92	722	90¼
45	University of Maryland	60	45	30	80	55	84	84	94	532	66½
46	University of Maryland	86	75	31	80	77	94	90	92	625	78⅛
47	University of Maryland	80	80	48	80	75	90	95	94	642	80¼
48	University of Maryland	100	90	70	90	85	87	90	74	706	88¼
*49	College of Physicians and Surgeons, Balto.	100	..	..	..	..	68	82	89	239	....
50	Baltimore Medical College	75	90	26	85	75	60	80	84	575	71⅞
51	University of Medicine, Richmond, Va.	70	70	21	75	79	45	84	77	521	65⅛
*52	University of Maryland	90	..	..	..	..	43	62	92	287	....
53	Charity Hospital, New Orleans, La	50	75	63	90	63	45	76	73	535	66⅞
*54	Baltimore Medical College	100	..	..	..	..	89	85	89	263	....
*55	Baltimore Medical College	100	..	..	..	..	89	95	94	278	...
*56	Maryland Medical College	100	..	..	..	..	73	89	94	256	....
57	Woman's Medical College, Baltimore	86	95	90	95	94	92	90	100	642	80¼
58	Woman's Medical College, Baltimore	75	90	80	80	92	96	84	90	687	85⅞
59	University of Maryland	80	80	41	85	88	76	85	89	624	78
60	Baltimore Medical College	100	80	73	95	93	89	92	94	716	89½
61	University of Maryland	75	75	48	90	85	82	92	91	638	79¾
62	Baltimore Medical College	95	90	78	95	81	76	92	94	701	87⅝
63	Medical Department Johns Hopkins	75	80	48	100	75	53	85	87	603	75⅜
64	Medical Department Johns Hopkins	95	90	83	90	94	68	69	82	671	83⅞
65	Columbia University, Washington	75	80	65	90	77	66	70	92	615	78⅛
66	Baltimore Medical College	100	90	68	100	94	71	85	90	698	87¼
*67	Baltimore Medical College	..	..	..	..	..	41	..	15	56	....
*68	Baltimore Medical College	75	..	..	..	..	48	65	70	258	....
*69	Baltimore Medical College	95	..	..	..	..	71	90	90	346	....
70	University of Maryland	90	90	78	90	92	95	90	75	700	87½
71	University of Maryland	85	80	61	90	80	94	92	90	672	84
72	College of Physicians and Surgeons, Balto.	100	90	53	95	88	96	84	87	693	84⅜
73	University of Maryland	100	85	43	90	87	94	89	90	678	84¾
74	College of Physicians and Surgeons, Balto.	80	75	71	80	93	95	94	94	682	85¼
75	College of Physicians and Surgeons, Balto.	95	80	43	75	75	94	89	75	626	78¼
76	College of Physicians and Surgeons, Balto.	95	75	46	75	86	88	87	90	620	77½
77	College of Physicians and Surgeons, Balto.	85	75	53	85	81	93	89	92	653	81⅝
78	University of Maryland	84	80	46	70	66	60	82	99	587	73⅜
79	College of Physicians and Surgeons, Balto.	95	95	38	90	94	96	95	90	693	86⅝
80	University of Maryland	90	90	65	90	77	90	90	97	689	86⅛
81	University of Maryland	100	90	61	75	84	86	82	82	660	82½
82	University of Maryland	90	80	40	75	81	74	74	87	601	75⅛
83	University of Maryland	90	80	38	60	77	75	77	69	566	70¾

SUMMARY OF RESULTS OF EXAMINATION HELD BY THE BOARD OF MEDICAL EXAMINERS OF MARYLAND, JUNE 11, 12, 13, 14, 1902.—CONTINUED.

Number	College of Graduation.	Anatomy	Surgery	Pathology	Obstetrics	Practice	Chemistry	Materia Medica and Therapeutics	Physiology	Total	Average
84	University of Maryland	100	90	61	95	73	97	95	99	710	88¾
85	University of Maryland	75	85	18	75	76	94	84	89	586	73¼
86	University of Maryland	75	65	16	75	76	55	68	75	506	63¼
87	Baltimore Medical College	100	90	61	85	81	66	87	90	660	82½
88	Baltimore Medical College	100	95	75	100	90	96	85	94	735	91⅞
89	University of Maryland	98	85	61	80	85	75	94	94	672	84
90	University of Maryland	90	80	23	85	76	93	87	69	603	75⅜
91	University of Maryland	80	60	30	75	66	79	90	89	569	71⅛
92	Baltimore University School of Medicine	25	75	28	75	58	66	78	75	490	61¼
93	Baltimore University School of Medicine	25	60	26	75	75	38	62	20	381	47½
94	University of Maryland	85	80	41	85	77	85	95	99	647	80¾
* 95	Maryland Medical College	75	..	..	..	..	73	80	69	297	....
96	Maryland Medical College	75	75	50	90	79	78	90	62	600	75
97	Maryland Medical College	..	30	21	50	38	61	26	53	279	34⅞
98	Maryland Medical College	70	..	..	..	89	74	75	77	389	48⅝
99	College of Physicians and Surgeons, Balto.	80	75	60	75	89	80	87	85	631	78⅞
100	College of Physicians and Surgeons, Balto.	75	80	38	90	79	83	79	87	611	76⅜
101	University of Maryland	100	90	71	90	83	95	90	95	714	89⅛
102	University of Maryland	85	80	38	95	75	87	90	90	640	80
103	University of Maryland	85	60	41	75	79	83	82	95	600	75
104	University of Maryland	100	80	56	95	78	64	89	89	651	81⅜
105	University of Maryland	75	85	41	80	61	70	77	90	579	72⅜

Of the 105 applicants presented, in the above table, 88 were Graduates and eligible to examination for license to register as Physician and Surgeon. Those marked * are second-year students who, under the law of 1902, are eligible to examination in Anatomy, Chemistry, Materia Medica and Physiology, upon presentation of a Certificate from the Dean of the Medical College that they have successfully passed the examination in these branches. A general average of 75 being required, it will be seen from the above table that of 88 applicants for license 24 failed to reach that average. Of the 17 second-year students, 12 failed in one or more branches.

SUMMARY OF RESULTS OF EXAMINATION HELD BY THE BOARD OF MEDICAL EXAMINERS, DECEMBER 10, 11, 12, 1902.

Number	School of Graduation.	Anatomy	Surgery	Pathology	Chemistry	Practice	Obstetrics	Physiology	Materia Medica and Therapeutics	Total	Average
* 1	Maryland Medical College	..	..	..	2	..	35	..	..	37	....
2	Medical Dept. Johns Hopkins University	71	75	75	45	80	100	85	70	601	75⅛
3	Baltimore University School Medicine	50	70	28	81	77	84	90	87	567	70⅞
* 4	Baltimore Medical College	..	..	32	27	..	..	..	..	59	....
5	Jefferson Medical College	94	80	53	56	80	84	94	65	606	75¾
* 6	Baltimore Medical College	..	..	45	47	..	..	..	75	167	....
7	Baltimore University School of Medicine	71	60	63	76	78	60	82	82	572	71½
8	Howard Medical College	75	75	43	58	74	100	87	89	601	75⅛
9	Howard University	97	75	71	63	85	67	82	92	632	79
10	Leonard Medical College, Shaw University	63	80	26	66	71	50	94	90	540	67½
11	Maryland Medical College	44	60	43	31	67	84	90	84	503	62⅞
*12	Niagara University	36	..	15	..	..	84	..	70	205	....
13	Maryland Medical College	89	75	51	53	79	100	95	95	637	79¾
14	Maryland Medical College	75	60	50	38	82	84	85	84	558	69¾
*15	Baltimore University School of Medicine	50	75	38	22	..	..	70	87	342	....
16	Maryland Medical College	87	95	61	68	91	100	90	95	687	85⅝
17	Woman's Medical College, Philadelphia	100	90	76	92	94	84	90	87	713	89⅛
*18	Baltimore University School of Medicine	20	..	43	30	77	..	..	..	170	....
19	Medical Dept. Johns Hopkins University	100	90	96	90	99	100	97	90	762	95¼
20	Maryland Medical College	30	40	40	45	71	67	52	82	427	53⅜
21	University of Maryland	75	70	65	89	90	100	84	85	658	82¼
22	Baltimore Medical College	75	80	48	26	80	84	90	94	577	72⅛
23	University of Maryland	21	25	51	44	78	75	82	87	463	57⅞
*24a	University of Maryland	..	..	33	..	..	84	94	..	211	....
*24b	University of Maryland	..	..	..	..	75	..	..	..	75	....
25	University of Maryland	75	80	30	44	81	84	70	85	549	68⅝
*26	Maryland Medical College	90	..	48	56	87	..	80	..	361	....
*27	Baltimore University School of Medicine	75	..	48	42	84	..	94	..	343	....
*28	University of Maryland	..	60	20	..	75	..	..	..	155	....
29	Baltimore University School of Medicine	..	40	43	25	69	90	92	80	439	54⅞
30	Medical Dept. Johns Hopkins University	75	80	60	61	74	100	67	66	583	72⅞

Of the 30 applicants, in the above table, taking the examination, 9 received the required average of 75. Those marked with an * failed in previous examinations, and under the law of 1902, were entitled to re-examination in branches in which they had failed.

REPORT OF THE MEDICAL EXAMINERS.

QUESTIONS AT THE JUNE (1902) EXAMINATIONS.

CHEMISTRY.

1. Define an acid and state its general properties.
2. State of the two chlorides of mercury: Their names, composition, solubility, color, and general characteristics. Give antidote for either of these chlorides.
3. What are "seidlitz powders," and what chemical changes take place when they are mixed in solution?
4. What is the composition of the atmosphere by volume?
5. What is blood plasma? Give its average composition.
6. State the properties of pure gastric juice and give its average composition.
7. Mention the five principal constituents of milk, and state the difference between human milk and cow's milk.
8. Describe in detail one test each by which sugar and albumen may be detected in the urine.

ANATOMY.

1. Describe the sacro-iliac articulation.
2. Describe the fissures and name the lobes found upon the external surface of the cerebrum.
3. Describe the internal iliac artery.
4. Describe the Eustachian tube.
5. Describe the mammary gland.
6. Describe the prostate gland.
7. Describe the femur.

MATERIA MEDICA AND THERAPEUTICS.

1. What are diuretics, diaphoretics? Name the principal drugs of each class and give their doses.
2. Name the preparations of arsenic used in medicine, giving both the medicinal and common names. Give the dose of each preparation and therapeutic uses.
3. Name the different classes of purgatives. Mention the principal drugs of each class and give their doses.
4. Give the preparations, doses and alkaloids of nux vomica. Give its therapeutic uses; also the treament of poisoning by this drug.
5. Give preparations, doses and physiological action of ipecacuanha.
6. Describe in detail the treatment of aconite poisoning.
7. What are the indications for the use of digitalis?

PHYSIOLOGY.

1. Define (1) peristalsis, (2) endosmosis, (3) filtration.
2. What is the function of the crystalline lens?
3. What are proteids? Give two examples. How do fats differ from them?
4. Trace the course of blood from the superior and inferior vena cava to the aorta.
5. Gives names and locations of the salivary glands. Describe their secretions and functions.
6. Give in detail the physiology of respiration.

PRACTICE.

1. Name the varieties of chronic nephritis. Give symptoms and treatment of one variety.
2. Give differential diagnosis between variola and varicella; also between measles and scarlet fever.
3. Define difference between lobar and lobular pneumonia. Give differential diagnosis between empyema and sero-fibrinous pleurisy.
4. Describe symptoms of intestinal obstructions and name three types.
5. Give causes, symptoms, and treatment of simple acute neuritis.
6. Give symptoms and diagnosis of acute primary and early secondary syphilis.

OBSTETRICS.

1. Describe the fetal circulation and the changes that take place in it at birth.
2. Describe the migration of the testicle in the fetus.
3. Give the normal dimensions of the fetal head and describe its facility of adaptation to the parturient canal.
4. Give diagnosis of pregnancy and name some of the simulating conditions thereto prior to the fourth month.
5. Describe aseptic management of normal labor in its three stages.
6. Name indications for use of forceps, how to apply them, and the danger in their use.
7. Give mode of delivery in a shoulder presentation.
8. Diagnose prolapse of funis and describe treatment for same.

SURGERY.

1. Define (a) suppuration, (b) abscess, (c) ulcer, (d) sinus, (e) fistula.
2. Define shock. Give (a) its diagnosis, (b) its treatment.
3. Describe a bloodless method of amputation at the hip-joint.
4. Define scoliosis and give its treatment.
5. Define aneurism and give the treatment of popliteal aneurism.
6. Describe a resection of the ribs.

QUESTIONS AT THE DECEMBER (1902) EXAMINATIONS.

CHEMISTRY.

1. Define the terms element, mechanical mixture, and chemical compound.
2. Give a process for making hydrochloric acid. State its composition and properties. Give antidote.
3. What are the component parts of Fehling's solution? Describe its clinical use.
4. What is an alcohol? By what process is methyl alcohol obtained? Under what other name is it known and what are its properties?
5. How may the quantity of albumen in the urine be determined approximately?
6. By what chemical procedure would you determine a given stain to be blood?

ANATOMY.

1. Describe the outer surface of the vertical portion and the horizontal portions of the frontal bone.
2. Describe the elbow-joint.
3. If the brachial artery be ligated at its middle and lower third, through what arteries will collateral circulation be established?
4. Give distribution, course, and name the branches of the pneumogastric nerve.
5. If a needle should enter the center of the eye in front and pass directly through it, name the different media and coats of the eye it would injure, commencing in front.
6. What arteries are the following a branch or continuation of: Inferior dental, posterior temporal, ulnar, peroneal, superior epigastric.
7. What veins form the portal system? Describe this system of veins.
8. Bound Scarpa's triangle, and give the position of the femoral artery in the triangle, and the relation of the artery, vein, and nerve to each other.
9. Give the origin and describe the division of the right subclavian artery.

PATHOLOGY.

1. Give definitions of the following bacteriological terms: Coccus, bacillus, spirillum, saprophyte, parasite, erobic, anerobic, pathogenic, chromogenic, pyogenic.
2. Name and give a brief description of the morphological characters of the specific cause of two of the following affections: Acute lobar pneumonia, bubonic plague, leprosy, erysipelas.
3. Describe in detail the preparation for microscopic examination of a specimen of pus from an ordinary abscess and give a brief description of each of the elements you might expect to find therein.
4. (a) What is an infarction? Mention its varieties and explain wherein one variety differs from another. (b) In what organ do infarctions most commonly occur, and why?
5. (a) Give a detailed description, gross and microscopic, of a solitary gray or miliary tubercle. (b) How would you differentiate microscopically between tubercular and syphilitic growths?
6. Describe in detail the changes in the heart and general circulation consequent upon a moderate degree of insufficiency of the aortic valves.

PHYSIOLOGY.

1. Describe the coagulation of blood. What chemicals retard or prevent the same?
2. Describe the process of digestion, beginning with prehension.
3. Give the average daily amount, normal specific gravity, component parts, and reaction of urine.
4. Mention the functions of the spinal cord.
5. What is the physiological action of the pneumogastric nerves on the heart, and what would happen to the heart if they were cut?
6. How does arterial blood differ from venous?

MATERIA MEDICA AND THERAPEUTICS.

1. Name the preparations of mercury, doses of each, incompatibles, and therapeutic uses.
2. Name four mineral acids, their doses and physiological action.
3. Give the source and composition of belladonna — preparations, doses, physiological action, and treatment of belladonna poisoning.
4. What are anthelmintics? Name the principal ones, their doses, and how should you treat your patient before giving the anthelmintic in order to get the best result from its administration.
5. What are the contra-indications for the use of chloroform as an anesthetic? What danger signals may arise during its administration, and how should these danger signals be treated?
6. What are the indications for the therapeutic administration of nitro-glycerine, digitalis, and iron, and give reasons?

OBSTETRICS.

1. Diagnostic points of R. O. A. presentation determined by abdominal and vaginal examination, and describe the normal mechanism of labor from this position.
2. Causes and dangers of antepartum hemorrhage.
3. Describe delivery by breech, with especial reference to the aftercoming head.
4. Management and treatment of eclampsia occurring before and after labor.
5. Method of repairing partial rupture of perineum.
6. Treatment of laceration of the cervix.

PRACTICE.

1. Define pyelitis, cirrhosis of the liver, ulcerative stomatitis, and chorea.
2. Give differential diagnosis between measles and scarlet fever, and also name most common complications and sequelae of scarlet fever.
3. Give symptoms, synonym, and treatment of herpes zoster.
4. Name conditions with which uremia may be confounded and give differential diagnosis and treatment.
5. Typhoid fever — give symptoms, diagnosis, treatment.
6. Give differential diagnosis between serofibrinous pleurisy, lobar pneumonia, and tubercular consolidation of the lung.

SURGERY.

1. Define mastoiditis, mastitis, orchitis, epididymitis.
2. Describe the usual forms of dislocation of the hip-joint and their modes of reduction.
3. Normal salt solution—(a) how prepared, (b) its surgical uses, (c) modes of adminstering it.
4. Fracture of the base of cranium, its signs and symptoms.
5. Give signs and symptoms of (a) concussion of the brain, (b) compression of the brain.
6. Describe the operation of resecting the knee-joint, with dressing and after-treatment.

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A FATAL CASE OF SCHÖNLEIN'S DISEASE.

By William T. Watson, M.D.,
Baltimore.

SCHÖNLEIN'S disease, or rheumatic purpura, or peliosis rheumatica, is classified as one of the arthritic purpuras. It is rarely a fatal disease, and consequently its pathology has not been thoroughly studied. Its etiology is still a matter of mystery, but is at present engaging the attention of Osler and others.

This case is reported because of the comparative rarity of the disease, but more especially on account of its fatal termination and autopsy.

A. S., female, aged ten and one-half years, had measles and chicken-pox when quite young, and at the age of six a swelling of the middle of the right leg, which lasted for two or three days. With these exceptions she had always been strong and well up till the advent of her last illness.

For two or three months prior to the onset of the disease she occasionally complained of a slight pain in the abdomen, which would pass away in a few minutes. The pain was never severe. She had also complained frequently of headaches during the two weeks preceding the acute attack, but they had not prevented her attendance upon school.

On the evening of January 28, while visiting a relative, she was taken with a chill, which was followed by high fever. On the 29th the fever continued, and there was frequent vomiting; no pain. The 30th was a repetition of the 29th.

On the 31st, in addition to fever and vomiting, other symptoms appeared. She complained of aching of the arms, legs and back. Small isolated spots like measles appeared upon the arms and on the front and back of the chest; none on the face or neck. The skin over the whole lumbar region was uniformly red and itched intensely. At other places on her skin where pressure was made, as on the thighs when she sat on the edge of the bed, and on the hips when she sat on a vessel, intense redness would appear, soon to disappear.

On February 1 the right wrist commenced to swell in the morn-

ing, the right ankle in the afternoon. An eruption appeared on the buttocks, thighs, and abdomen.

On February 2 I saw the case for the first time. Temperature normal, and no vomiting. The right tonsil was enlarged and inflamed. Both wrists and both ankles were swollen and tender to pressure, the ankles more so than the wrists. There was no rash on arms or chest. On the abdomen there were half a dozen discrete hemorrhagic spots about half the size of a penny. The skin on the buttocks and posterior aspect of both thighs almost to the knees was the site of a continuous purpuric eruption.

On February 3 there was no further eruption. The swelling of the joints was subsiding. The urine was highly albuminous.

On the 9th the joints were normal. The purpuric areas on the abdomen had almost disappeared, while those on the hips and thighs had faded to a dirty brown. Some edema was noticed about the eyes and cheeks and in the skin of the lower part of the abdomen. The urine contained large quantities of albumen. The patient felt perfectly well, and remained in bed only when watched.

From this time the history is that of an acute nephritis. The patient was quite comfortable up till about March 1, when the urine became scanty and bloody; the edema rapidly increased, and ascites developed. There was diarrhea for a few days, followed by obstinate constipation. She vomited, complained of pain in the back, and slept badly. Her temperature rose on March 5 to 100.5°, and on March 6 to 100°, and then remained normal till her death.

On March 5 the urine for twenty-four hours was about eight ounces. It was bloody and full of albumen. The quantity of urine diminished steadily till there was almost complete anuria.

Dr. Thayer saw her with me on March 5, at which time the purpuric area was still faintly outlined.

There were no cerebral symptoms, the mind remaining clear till the last. On March 12 her heart action became very irregular, and dyspnea became very distressing. On March 13 she died at 6.30 P. M. Dr. McCallum made the autopsy at 9 P. M. His report is as follows:

"Anatomical diagnosis: Acute hemorrhagic glomerulo-nephritis, anasarca, broncho-pneumonia.

"Body of a girl 130 cm. long. Body walls and legs very edematous. Skin has an ashy pallor. No hemorrhages visible. Marked ascites present; fluid very clear; peritoneal surfaces smooth. Pericardium contains but little fluid.

"All abdominal viscera extremely edematous. Mesenteric lymph glands slightly enlarged and pink.

"Heart is somewhat enlarged. All the valves are delicate and competent. Endocardium everywhere smooth. Under that of the left ventricle are a few small hemorrhages. Epicardium is smooth and glistening, but there are several tendinous patches. Coronaries normal. Heart muscle rather translucent; fairly firm.

"Lungs: Left is bound to the pleura by a few old adhesions. The lungs are practically alike. Pleura shows no fresh exudate.

The surface is rather pale, mottled with dark areas. Lower lobes are congested. On section both lungs are very edematous, especially in the lower parts. Scattered throughout there are slightly-elevated, but smooth, firm nodular areas which have a red color deeper than that of the adjacent lung tissue. These consolidated areas are rather larger in the lower lobes. Bronchi slightly congested. Arteries, etc., clear. Lymphatics over surface of lung widened.

"Spleen is enlarged—11½x6½x4½ cm. It is fairly firm. Capsule is tense. On section the pulp is swollen and velvety; rather pale red in color and slightly grayish. The malpighian bodies stand out as sharply outlined gray marks.

"Liver is not especially enlarged. Surface everywhere smooth. On section the lobules are sharply enough outlined; cut surface is homogeneous yellow-brown in color.

"Kidneys: Both kidneys are alike. They are immensely enlarged, measuring each 12x7x4½ cm. Capsule strips off readily, leaving a smooth, pale surface. The surface is rather translucent, and one can apparently see into the substance of the kidney. It is sprinkled with opaque whitish-gray pinhead areas. The surface is also finely sprinkled with minute hemorrhages. On section the cortex measures 8 mm. to 1 cm. in thickness. It is very pale; striations are distinct and swollen in appearance, the translucent striae alternating with opaque yellowish-white ones. Vessels are not especially injected. The hemorrhages are less abundant on the cut surface than on the capsular surface. The glomeruli are especially prominent as gray translucent nodules, almost like miliary tubercles. They stand out above the cut surface like little pearls. The pyramids are quite pale.

"Other viscera are apparently normal except that there are some small hemorrhages in the mucosa of the ileum, with minute losses of substance.

"Microscopically, the kidney shows extensive degeneration in the renal epithelium. Many tubules are partly filled with desquamated and degenerated epithelial cells, while the lining of others is ragged and shows fatty change. The tubules contain, besides the desquamated cells, many hyaline casts, or are sometimes filled with red-blood corpuscles. The glomeruli form the most striking feature in the section. The malpighian tuft is in almost every one much compressed by the new growth of a mass of cells in the area of the capsular space, which forms a crescentic mass. These cells lie in a connective-tissue meshwork which is continuous with the connective tissue outside the capsule. They have often small subdivided capsular spaces lined by capsular epithelium, suggesting that the original capsular space was merely invaded by this new growth.

"The interstitial tissue is edematous and infiltrated with many nucleated cells of the type of round and plasma cells. Polymorphonuclear leucocytes also occur, and here and there are definite hemorrhages between the tubules. The blood-vessels—especially the

smaller cortical twigs of the arteriolae rectae—sometimes show an extensive hyaline degeneration of their media, with a dense infiltration of fragmented nuclei in the adventitia. Weigert's stain shows a small amount of fibrin, forming a network in the interstitial tissue here and there—not in the glomeruli."

THE PROGNOSIS OF CHRONIC OTORRHOEA.

By H. O. Reik, M.D.,

Instructor in Ophthalmology and Otology in the Johns Hopkins University, and Surgeon in the Baltimore Eye, Ear and Throat Charity Hospital.

READ BEFORE THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND AT THE SEMI-ANNUAL MEETING, HELD IN LAUREL, NOVEMBER 18, 1902.

In this paper it is my object to point out the fact that, with proper care and thorough treatment, the cure of chronic suppurative otitis media is nothing like so hopeless a matter as many physicians seem to regard it, and, further, to call attention to some comparative recent work in otology which makes it possible to offer a more satisfactory prognosis than we have heretofore felt warranted in giving.

So much has been written in recent years about the serious complications or sequelae of otitis media that we might expect every physician in the land to be familiar with the necessity for treatment of every case of otorrhea, and yet it is by no means an uncommon experience to hear from an intelligent patient that Dr. ———, whom one would expect to know better, has said that it was useless or unnecessary to treat this diseased ear, or, perhaps worse, that "if you stop the discharge, it will only break out somewhere else." The old notion that a suppurating fistula was a good thing to have and a dangerous thing to suppress has been pretty generally abandoned as concerns the rest of the body. Why not for the ear? Surely, there is not the slightest evidence that this organ was intended as part of a sewerage system.

When considering the dangerous features complicating otitis media we have long been accustomed to think of the many possibilities, not to say probabilities, for the direct extension of infection to the highly important neighboring structures. With these you are sufficiently well acquainted, and I need only mention mastoiditis, lateral sinus thrombosis, meningitis, cerebral and cerebellar abscesses, and general septico-pyemia. Recently we have learned that there are a large number of deaths, and, of course, a larger number of cases of illness, due to disease in more remote parts of the body, but which originated in purulent disease of the ear. It has been pointed out by very competent clinical observers, and proven by numerous autopsies, that in children especially many cases of broncho-pneumonia and of gastro-enteritis can be traced to the ear as the source of infection, the pus having drained through the Eus-

tachian tube into the pharynx, and thence, by way of the esophagus or the bronchi, spread the infection over the intestines or the lungs, or having been transported from one point to another by the vascular system. It is to be remembered that in childhood the Eustachian tube is much more patulous than in adult life, and that it is perfectly possible for an inflamed tympanic cavity to evacuate its purulent contents through this channel instead of rupturing the tympanic membrane and discharging from the auditory canal. Hence in many of the autopsies referred to above, where the source of the fatal disease was found to have been in the ear, no ear trouble had been suspected during life. This emphasizes again, and very forcibly, the necessity for examining the ears in all cases of obscure inflammatory diseases of children.

Now, if we bear in mind that, in addition to this class of cases, the size of which has not yet been estimated, about one-half of all brain abscesses, fully as large a percentage of thromboses of the cerebral sinues, the vast majority of all meningeal affections and nearly all cases of mastoiditis are due to neglected suppurating ears, and consider further that today no reputable life insurance company will accept the risk involved in insuring an individual who is, or who has been within two years past, the victim of an otorrhea, we readily understand the importance of considering the prognosis in any given case of suppurative otitis media. It would be very interesting to consider also some of the hygienic problems occurring here. For instance, how often are these patients responsible for direct conveyance of septic poison to their associates? How many cases of sore throat, sore eyes, etc., arise from contact with schoolmates or playmates afflicted with running ears? We know that most of these chronic otorrheas show the presence of either staphylococci, streptococci, or pneumococci.

The prognosis of any disease necessarily involves some consideration of the different forms of treatment, if there be more than one applicable, and in the present instance the conditions vary so widely in different cases, and the treatment to be adopted is consequently so different, that one finds it especially difficult here to give a prognosis in general terms. It is my intention to avoid as far as possible any extended discussion of treatment at the present time.

Naturally, it is desirable to secure relief for our patients whenever possible by non-operative measures, and it may be said as a general rule that every case of chronic suppurative otitis media should be carefully and conscientiously subjected to the simpler methods of treatment before resorting to surgery. By thorough cleansing of the auditory canal and tympanic cavity, through the use of antiseptic irrigations, or by the so-called dry method, employed frequently enough to keep the tympanum clean, a cure will result in more than 50 per cent. of all these cases, and with the aid of stronger antiseptic applications, astringent solutions, and caus-

tics this percentage of cures by medicinal means can be materially increased.

Considerably less than half our cases, then, will call for some surgical treatment, either of minor or major degree, and it is to this class that I particularly direct your attention because of the improvements in the measures suggested and the method of their employment. Among the minor operations may be classed the removal of polyps and cauterization of granulation tissue in the tympanum to facilitate the beneficial effects of the remedies spoken of above. We know with practical certainty now that every case which resists this kind of treatment does so because the disease process has reached some inaccessible part of the middle ear or mastoid antrum, and hence arises the necessity for major surgical intervention.

In most instances of this kind it will be found that necrosis of the ossicles exists, and that ossiculectomy, the removal of one or more of these little bones with the remnants of the drum membrane, will permit a cure through the improved opportunity for draining and cleansing the tympanum. While a delicate operation, this is a comparatively simple and safe one, and results in cure in about 50 per cent. of cases. By one means or another we shall thus have succeeded in curing from 75 to 80 per cent. of our cases of chronic suppurative otitis media. In the cases in which ossiculectomy fails, or in which it does not seem applicable because there is necrosis of the walls of the tympanum or antrum, no good can be accomplished except by the so-called radical operation or mastoid exenteration. This operation consists in trephining through the mastoid process, and, after gaining entrance to the antrum, removing the posterior wall of the bony external auditory canal so that the antrum, tympanum, and canal are all converted into one large cavity. The auricle, which had been detached as in the ordinary mastoid operation, is then sutured back in position, and the new cavity is lined with epidermis by grafting or by turning in flaps from the cartilaginous wall of the canal. This operation has now been employed sufficiently long to enable us to draw safe conclusions as to its value, and various operators claim from 80 to 90 per cent. of cures in the cases treated. In the hands of the better surgeons the higher claim seems to be not at all unreasonable.

Reviewing what I have said about the possibilities of the different forms of treatment, it will be seen that only from 2 to 5 per cent. of cases need be counted as at present incurable, and it seems reasonable to predict that as surgeons become more familiar with the technique of the radical operation even this small percentage will be decreased. In view, then, of the admittedly grave danger to the health and life of any person the subject of chronic otorrhea and of the almost certain curability of every case submitted to proper and persistent treatment, let us no longer be guilty of neglecting these cases.

PERFORATING WOUNDS OF THE CRYSTALLINE LENS.

By Geo. A. Fleming, M.D.

THREE cases of special interest in injuries to the crystalline lens have recently come under my care, and I feel that they should be reported:

Case 1. L. C., male, aged thirty-seven years, came to the Presbyterian Eye, Ear, and Throat Charity Hospital on October 16, 1902, with the history that one hour before he had been struck in the left eye by a piece of wood while he was chopping a rotten log. On examination I found that a splinter had penetrated the cornea just to the inner side of the ciliary border, going through the iris and lens, and even entering the vitreous. One end of the splinter could be seen in the anterior chamber, projecting from the iris. After enlarging the corneal wound under cocaine, I succeeded in removing it without special trouble, and found it to be a piece of decayed wood one-fourth of an inch long and about one-eighth of an inch wide at its greatest diameter. Atropia was instilled, a pressure bandage applied, and the patient ordered to take ten grains of iodide of potash every four hours. Although the next morning the anterior chamber was found to be almost half full of pus, showing a badly-infected wound, the eye gradually improved, and the patient made an excellent recovery, having today, March 1, 20/30, or almost perfect distant vision, and reading fine print with ease. On examination through the dilated pupil a faint scar can still be seen in the cornea, the iris perfectly healed over, and the track of the splinter can be made out like a small hair running back through the lens and vitreous.

Case 2. R. H., female, aged thirty years, came to the hospital on October 24 with the history of having been struck in the left eye the day before by a large carpet tack while taking up some old matting from the floor. She stated that the tack, after remaining in the eye for what seemed to her several minutes, had dropped to the floor.

On examination I found a small corneal wound, the iris torn across at its outer and lower quadrant, and a distinct line running back through the lens and vitreous, showing the track of the point of the tack. The lens was already beginning to swell, and considerable exudate could be seen in the neighborhood of the puncture. The same treatment was followed as in the previous case, and although the lens became clouded to fully one-third of its extent, the patient made an uninterrupted recovery, having today perfect vision, and only on the most careful examination can any sign of the injury be made out.

Case 3. Mrs. A. C., aged forty-five years, came to my office on December 15, having been struck in the right eye a few minutes before by a long hatpin in the hands of a playful child. All that I

could make out was a small wound in the cornea at the lower and inner quadrant, but as the anterior chamber was almost half full of blood, and I could only get a slight reflex from the pupil, I decided that the pin had punctured the iris, lens, and probably the vitreous, as in the other cases reported. The same treatment was followed, and the eye slowly but steadily improved, until now she has perfect distant vision, and can read fine print with + 1 D. S., her presbyoptic correction. She still has a faint scar in the cornea, and a small hole can be made out in the iris, while the track of the pin can be followed through the lens and also the vitreous, appearing like a fine black hair through the dilated pupil. It seems remarkable that in all three of these cases the crystalline lens, even after severe injury, and after the inflammatory exudate had involved fully one-third of its extent, should clear up and regain its normal transparency and activity.

Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

THE CLINICAL VALUE OF BLOOD-PRESSURE DETERMINATION AS A GUIDE TO STIMULATION IN SICK CHILDREN.

Cook, in a previous number of this JOURNAL (January, 1903), in association with Briggs, published an interesting article on the value of an accurate knowledge of arterial blood-pressure to the clinician. In a more recent article (*The American Journal of the Medical Sciences*, March, 1903) he pays especial attention to the value of blood-pressure determinations in the case of sick children, especially as a means of determining whether or not they should be stimulated. These investigations were made at the Thomas Wilson Sanitarium for Sick Children, situated near Baltimore. The instrument used to determine the blood-pressure was a modification of the original Riva-Rocci sphygmomanometer, the principle of this instrument being a continuous system of air so arranged that equal pressure can be transmitted from a rubber bulb held by the operator to a band placed around an arm or leg of the patient, and at the same time connecting with a mercury manometer, which registers the pressure in millimeters. The instrument is easy of application; so easy, in fact, that comparatively accurate observations can be made by nurses, and the limit of error is slight—according to Hensen, not more than three millimeters in children. The object of the investigation was to see if a more accurate method than the simple palpation of the pulse is not practicable in determining whether a sick child needs stimulation or

not, and whether he is overstimulated. "During the first few months the pressure averages about 70 or 75 mm., and during the last half of the first year 80 or 85 mm., but lower than 60 mm. is rare except where the need for stimulation is urgent. During the second year a pressure from 80 to 90 mm. may be expected, and in the third year the range is between 90 and 100 mm., and does not go much above 110 mm. during childhood.

"The blood-pressure of children is a much more absolute quantity than in adults, when such factors as difference in musculature and arterio-sclerosis make great variations. Children from three to ten years, in health, lying at rest, have a blood-pressure that seldom varies within wider limits than from 95 to 115 mm., and for any child between these ages 85 mm. would be considered moderately low, 75 mm. low, and 65 mm. very low."

A rise in blood-pressure was noted shortly after feeding, this appearing to be similar to that noted by Crile, Cushing, and others after any abdominal compression, while crying, restlessness or any manifestations of excitement were often also accompanied by a rise in blood-pressure of 5 or 10 mm. in a healthy child. It was also noted that during the early morning hours there may be a fall in blood-pressure, while in the early evening hours the blood-pressure reaches its maximum. After the administration of strychnia a rise in blood-pressure of usually 10, occasionally 20 to 30, mm. took place, lasting in some cases six or eight hours, although a shorter time in the most ill patients. The action of digitalin in equal doses seemed to be more immediate and rather more sure to cause a higher rise in blood-pressure, which was maintained, however, a shorter time, from one to three hours. The effects of alcohol were rather inconstant, sometimes bringing about a rapid rise, at other times no rise at all, although under repeated doses many cases showed a gradual, steady and well-maintained rise in blood-pressure. Thus, where the demand for a stimulant is only moderate it would seem best to start with alcohol in doses of from 5 to 30 drops, according to the age of the infant, given well diluted and repeated every three or four hours, while for cases that do not improve on this, strychnine in doses of 1-400 to 1-200 of a grain should be administered, and if the heart becomes irregular or very rapid, digitalin in the same dosage may be added.

In the case of infusion of normal salt solution, in no case was the blood-pressure more than very transiently raised, though the administration of this solution was undoubtedly beneficial by assisting the elimination of toxins and by supplying fluid to the tissues. Cook found the blood-pressure determinations especially valuable at night when the following orders were left with the nurse in charge of the case, the pressure being taken every two hours: "If the pressure falls to 80 mm., give 1-200 grain strychnine; if to 70 mm., 1-200 grain strychnine and 1-200 grain digitalin; if to 60 mm., call the physician; if above 105 mm., omit the dose of alcohol."

Cook concludes that "from the results of stimulation in toxic conditions in children I do not feel justified in drawing conclusions

that similar effects would occur in other conditions of circulatory depression, such as hemorrhage, surgical shock, nor in adult morbid states, as the erroneous impressions of the clinical action of drugs as derived from physiological experiments tend to make one cautious in prophesying for stimulants similar action in different morbid states, or in the same morbid state under different conditions, without carefully observing each by itself. It would seem, however, that in formulating correct judgments of drugs, especially stimulants, blood-pressure observations will be found of great value, as they afford a trustworthy numerical basis from which to work. Observations on blood-pressure following these lines are now being made by Dr. J. B. Briggs and the author in the wards in the Johns Hopkins Hospital, and will be reported later.

"I wish again to insist, however, that it is not meant that blood-pressure observations in any form of treatment should take the place of other signs and symptoms, but merely that an accurate estimation of arterial tension furnishes an additional and not invaluable aid to stimulant therapy."

* * *

A CASE OF BANTI'S DISEASE, WITH DIFFUSE PRODUCTIVE NEPHRITIS.

Field (*American Journal of the Medical Sciences,* March, 1903) reports an interesting case of Banti's disease, with diffuse productive nephritis. He first calls attention to the fact that there are four pathological conditions resembling each other, to three of which his case presented considerable similarity. These conditions are:

1. Banti's cirrhosis, or Banti's disease.
2. Cirrhosis of the liver, with secondary enlargement of the spleen.
3. Splenic anemia.
4. Primary spleno-megaly of Bovaird.

After giving the history of his case and the result of the findings at autopsy, he discusses at some length the lesions found, paying especial attention to the question of differential diagnosis and the determination to which of the four groups previously mentioned his case belonged. His conclusions are as follows:

1. There are four conditions, more or less closely related, which may be distinguished as follows: Enlargement of the spleen, with anemia and the later development of a cirrhotic process in the liver, may be separated from cirrhosis of the liver, with secondary enlargement of the spleen, by the fact that in the latter condition the spleen never attains the size that it does in the former. Both these conditions may be separated from splenic anemia and primary spleno-megaly by the presence of the cirrhosis of the liver, while these two latter conditions may only be differentiated from one another after a microscopic examination of the spleen.

2. The case here reported should be placed among those cases termed "Banti's disease" for three reasons: (a) The very great enlargement of the spleen; (b) the presence of a cirrhotic process in the liver; (c) the fact that the enlargement of the spleen was

due to a general hyperplasia, but more especially of the connective tissue.

3. The present case, exhibiting an advanced chronic productive nephritis, somewhat extends the scope of the pathological anatomy of Banti's disease.

Speculation as to the etiology of the disease seems at present premature, but the increasing recognition of the occurrence of transitional cases connecting together Banti's disease, splenic anemia, and diffuse cirrhosis of the liver suggests an origin from a common cause emanating from the gastro-intestinal tract.

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THE IDENTITY OF NERVE FORCE AND ELECTRICITY.

O'Brien (*Journal of the American Association,* March 7, 1903) discusses the identity of nerve force and electricity, as he believes that the amount of research along these lines in recent years warrants us in looking again at many physiological problems and restudying them in the light of modern electricity. After discussing the priority of this theory, and stating that in 1900—that is, before the publication of Loeb's and Matthew's articles—he had presented a paper entitled "Analogies Between Nervous and Electrical Mechanisms: What Is Nerve Force?" he takes up, in turn, the speed of nerve and pulse transmission, nerve insulation, nervous and electric system analogies, and comes to the following conclusions, which, although somewhat metaphysical, are very interesting:

The construction of nerves has been closely, though unconsciously, imitated in electric cables.

Experiments on nerves should be interpreted according to the electrical peculiarities of cables, and not as if they were bare conductors.

Nerves are insulated, distributed and arranged like fine electric conductors.

Their purpose and use are the same as the purpose and use of electric conductors—namely, communication from point to point.

They convey some form of force, and there is not such a gulf between its velocity and that of electricity as has been supposed. This force must be electricity, because—

1. Electricity is always present when nerves act.

2. Electricity is the form of force that would do the work required. It is the form of force that would work with such construction.

3. Because the terminal and central mechanisms connected with the nerves correspond to the terminal and central mechanisms connected with electric systems of communication, and do similar work in sending, receiving, relaying, switching, transforming, accumulating, retarding, distributing, and translating impressions.

4. Finally, because electricity, with such construction of conductors and of terminal mechanisms, is the only form of force that we know of that would do all the work required.

He therefore maintains that nerve force is electricity, and that it

would advance knowledge of the nervous system and its functions to accept this proposition.

* * *

METABOLISM IN CHRONIC NEPHRITIS.

Rezetkowski (*Zeitschrift f. klin. Med.*, Vol. XLVI, p. 178) gives the results of the experiments which he has carried on under von Noorden's direction on the metabolism in the case of a patient who was suffering from chronic parenchymatous nephritis. The patient passed about 1700 c. cm. daily, with 2.6 per cent. of albumen. Neither uremic manifestations nor edema were present. The amount of albumen, uric acid, xanthin bases, and chlorides was determined, as well as the relation between the nitrogen and the phosphoric acid eliminated. The patient was first fed on milk, nutrose, white bread, and butter, and, after this, meat in increasing amounts was added until 60 per cent. of the total amount of nitrogen was given in the form of flesh. In this latter period a little cognac was given, so that during this latter period a distinct renal stimulant was also administered. The amount of albumen eliminated was the same in each period as well as the variations of the total nitrogen. The increased amount of meat given caused an increase in the uric-acid elimination, while during the same time there was rather a striking retention of phosphoric acid. The practical result of this investigation seems to show that meat is not to be eliminated from the dietary in the case of chronic parenchymatous nephritis.

REVIEW IN PEDIATRICS.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

DIAGNOSIS OF TUBERCULAR PERITONITIS IN CHILDREN. Kissel. *Arch. f. klin. Chirurg.*, Vol. LXV, Part II.

As a result of the study of fifty-four cases of tubercular peritonitis Kissel comes to the following conclusions:

1. Tubercular peritonitis is more common in children than is generally supposed.
2. It can be laid down as a general rule that all cases of so-called spontaneous ascites are really due to tubercular peritonitis.
3. Not infrequently the exudate in the peritoneal cavity will disappear under general tonic treatment, and the child will regain complete health.
4. In the majority of the cases the onset of the disease is imperceptible. The parents first notice that the child becomes pale and thin without apparent cause.
5. The presence of a coincident serous pleurisy is strong confirmatory evidence in the diagnosis of tubercular peritonitis.
6. Thickening of the parietal peritoneum is the most valuable sign in the diagnosis of tubercular peritonitis. This sign can be readily elicited before adhesions have formed by picking up a fold

of the anterior abdominal wall and palpating the peritoneum between the thumb and fingers, provided the examiner is accustomed to the palpation of the normal peritoneum.

7. In exudative tubercular peritonitis the fluid obtained by tapping is rich in albumen and has a high specific gravity.

8. In many patients who present no subjective symptoms and only moderate objective symptoms the whole peritoneum is covered with a thick layer of tubercular masses.

9. Chronic ascites due to tubercular pericarditis affords the greatest difficulties in differential diagnosis, but this condition is rarely seen.

10. Only in rare cases does tubercular peritonitis have a severe onset.

* * *

The Diffusibility of Scarlet-Fever Virus. John Sutherland. *The Lancet,* January 10, 1903.

In conducting an inquiry lately in an epidemic of scarlet fever directed mainly towards the question of diffusibility of the virus the author was struck with its low diffusibility. In the literature of scarlet fever it is generally assumed that this exanthem is carried and propagated by various media, *e. g.*, fomites, vistors, etc. Scarlet fever is intensely contagious, and throughout the whole course of the epidemic only one instance was noted of a susceptible (that is, a child unprotected by a previous attack of scarlet fever) child escaping the disease after contact with a desquamating case. The diffusibility, to some extent, must depend on how long the virus can survive and retain its "striking" power after its dissociation from a desquamating subject exposed at the same time to ordinary conditions.

In the present inquiry the author observed 224 cases of scarlet fever occurring in 132 households. The following is a short summary of the result:

Division I.—Ten families either could not or would not keep the infected children apart from the others; so second cases occurred in every one of these homes after intervals of two to fourteen days.

Division II.—In forty households the patients were either the only children of the house or the only susceptible ones. This group, therefore, affords no data.

Division III.—In thirty-four families a very well-intentioned attempt at isolation was begun and maintained for periods ranging between twenty-one and forty-three days. In all cases, however, in which the infected and susceptible children got together a second case of the disease was noted.

Division IV.—In forty-eight families this home isolation proved pre-eminently successful. Susceptible children lived in each of the forty-eight houses, and they all escaped. In all these houses the mother was obliged to act as nurse and housewife, and go from the sick child to other members of the household; still no transmission of the disease occurred.

The author concludes from his investigations that a healthy

nurse or attendant on a scarlet-fever case does not, under ordinary circumstances, carry the infection of scarlet fever even from one room to the other.

* * *

Early Hereditary Syphilis Without Exanthem. C. Hochsinger. *Wiener med. Presse,* No. 39, 1902.

In congenital syphilis the diagnosis cannot depend, as in the acquired form, upon the presence of a skin eruption, as is shown by the author's seventeen cases of congenital syphilitic children, in whom visceral and osteal changes were observed before the appearance of the exanthem.

In another group of fourteen cases ranging in age from seven to twenty-four days, and kept under observation for six months, at no time was any exanthem noted. In these cases congenital visceral lesions and alterations of the epiphyses, along with hyperplastic rhinitis, were the only lesions observed. In general, it may be said that in congenital infection, when lesions of the viscera and bones are present, they always precede the skin affection. This may readily be explained on embryological grounds, as the glandular elements of the skin are developed very late in fetal development. On the other hand, the visceral glands and long bones, which develop early, are seats of alteration for the syphilitic virus; consequently they are infected during intrauterine life, and the skin usually in extrauterine life. If the virus has been exhausted in the fetal period, we can see how the exanthem may entirely fail to appear. Hochsinger relates one case under observation from the day of the birth until its twelfth year, and while changes in the viscera and bones were present early, an eruption failed to appear.

In reference to the question whether the mercurial treatment, used as soon as the author's diagnosis of syphilis was made, could not account for the failure of the eruption to appear, the author states that an abortion of the exanthem is not probable, as experience with acquired cases in adults has shown that early treatment fails to abort an eruption, and, secondly, a certain number of his congenital cases which were treated at once for visceral lesions developed within ten weeks the typical specific exanthem.

The author concludes that there exists a congenital syphilis without exanthem, which, however, does not correspond to the parasyphilis of Fournier, but is a true and virulent syphilis. The author further doubts the existence of late hereditary syphilis without previous symptoms in early infancy, as these cases probably belong to the class of visceral and osteal lesions which were overlooked on account of the absence of the eruption.

As soon as the diagnosis of congenital syphilis is made the treatment should be begun without waiting for an eruption. Along with the coryza syphilitica other early manifestations are osteochondritis in the form of pseudo-paralysis and the diffuse liver syphilis. In the fourteen exanthem-free cases the former was

present in eight cases, the latter in seven cases. In all cases the spleen was enlarged.

* * *

Buttermilk as an Infant Food. Adolph Baginsky. *Pediatrics,* November 15, 1902.

In 1895 there appeared a small brochure by Dr. Jager telling of the advantages of an infant food long used in Holland—namely, buttermilk. This attracted but little attention until notice was again called to it by Matos and Salge (*Jahrbuch f. Kinderheilk,* Vol. XLV, No. 1). Baginsky began the use of it in 1901, and since then has made extensive use of it in feeding both in health and in gastro-intestinal diseases. The buttermilk used by him is made from pure cream, which is soured by means of bacteria, which produces a lactic-acid fermentation. The fat is thus extracted to a minimum. The buttermilk thus obtained is treated as follows: To one liter, fifteen to twenty-five grammes of wheat flour and thirty-five to fifty grammes of cane-sugar are added. Without constant stirring it is allowed to boil for two minutes. The milk is then poured into sterile bottles and kept on ice till used. Thus prepared, buttermilk contains fat .35 per cent., albumen 3.4 per cent., sugar 4.5 per cent. The high acidity is due to the presence of lactic acid, which is not injurious to infants. As to quantity, Baginsky gives it the number of colonies essential according to its age.

Of 182 cases of sick infants so fed, in 150 the results were excellent; in the remainder was less pronounced. While it was used with normal digestion to great advantage, the great value of buttermilk shows itself in the acute cases of dyspepsia up to the severe grades of enteritis, with vomiting and diarrhea. The improvement is shown, first, in the stools, which became pasty and lose their odor; secondly, by the gain in weight; thirdly, by an improvement in the general condition. Baginsky concludes:

1. Buttermilk is a good food for acutely and chronically sick infants.
2. It is well borne after attacks of acute dyspepsia and summer diarrhea.
3. In chronic diarrhea and enteritis it may be looked upon as a life-saving preparation.
4. Disturbances of nutrition, such as rickets and scurvy, have never been seen to follow its use.

* * *

Pertussis, with Special Reference to its Early Diagnosis from the Blood-Findings. Alfred Wanstall. *American Medicine,* January 10, 1903.

The author examined the blood of nineteen children ranging from seven months to eleven years of age, all of them suspected at the time to be in the catarrhal stage of whooping-cough. Fifteen of the nineteen cases, from their subsequent history, proved to be cases of pertussis, and four of them did not. The average number of leucocytes was 6698. A differential count of the leucocytes in eleven

of the fourteen cases of pertussis showed the lymphocyte percentage *exceeded that of the polynuclear neutrophilic leucocyte.*

It is particularly interesting that the mononuclear leucocyte percentage exceeds the polynuclear neutrophilic in these cases of pertussis almost as much as the polynuclear neutrophilic exceeds the mononuclear in all other diseases of children.

This increased lymphocytosis during the catarrhal stage is of importance in the diagnosis, as pertussis is very contagious during this stage.

* * *

THE DIFFERENTIAL LEUCOCYTE-COUNT IN THE NEW-BORN. L. M. Warfield. *New York Medical Journal,* September 20, 1902.

Warfield concludes that:

1. The leucocytes at the day of birth are more numerous than at any other time of normal life.

2. Nucleated red-blood corpuscles rapidly disappear from the circulatory blood of the healthy infant within the first three days of life.

3. The percentage of the eosinophiles varies widely in the blood of babies of the same age.

4. Myeolycytes and most cells are only occasionally found, and are in very small numbers.

5. The percentage of large mononuclear and transitional cells is large compared to that found in the blood of adults.

6. The polymorphonuclear cells at birth are not only relatively, but absolutely increased. They begin to decrease in numbers soon after birth, and by the eleventh day of a healthy infant's life they are fewer in number than the lymphocytes, while the number of the latter variety of cells has actually increased, and the differential count of the leucocytes on the eleventh day is practically identical with the count given in the text-books as normal for the infant's blood.

* * *

THE CONDITION OF THE BLOOD IN MEASLES AND SCARLET FEVER IN CHILDREN. Reckzth. *Zeitschrift f. klin. Med.,* Vol. XLV, No. 1.

A series of methodical blood examinations in sixty cases of measles and scarlet fever gave some interesting results, especially as to the eosinophiles, and important in an early differential diagnosis. Whereas in measles there was constantly found a diminution in number of eosinophiles, in scarlet fever a decided eosinophilia was always observed.

A further fundamental difference between the two diseases was noted in the total leucocyte-count. While a hypoleucocytosis was noted in measles, scarlet fever showed a hyperleucocytosis. However, in measles the characteristic picture can be obscured by complications, showing a leucocytosis, generally a lymphocytosis.

Scarlet fever usually shows a diminution of red-blood corpuscles, an anemia which is seldom present in measles.

SURGERY.

Under the Supervision of Hugh H. Young, M.D., Baltimore, Assisted by H. A. Fowler, M.D.

Four Hundred Operations for Stone in the Bladder. By Prof. A. von Frisch. *Wiener klinische Wochenschrift,* 1902, Nos. 13-15.

Von Frisch reports his results in 400 operations for vesical calculi from 1891 to 1901. In this series there were only three female patients. Litholapaxy was done in 306 cases, sectio alta in 94. In 31 patients there were 51 recurrences, making a total of 451 operations. The following table shows the distribution of cases according to decade:

	Up to 10 years,				3.	Between 50 and 60 years,						95.
Between	10	and	20	"	4.	"	60	"	70	"		172.
"	20	"	30	"	12.	"	70	"	80	"		72.
"	30	"	40	"	8.	"	80	"	90	"		9.
"	40	"	50	"	25.							

Those occurring in first fifty years, fifty-two cases (13 per cent.); after fifty years equals 87 per cent. These statistics do not agree with those of Civiales and Thompson, who find the percentage in early life much larger. Von Frisch states that a relatively large number of old people sought relief, and that in no case was an operation refused. The oldest case was eighty-seven years.

The frequency of the various forms of vesical calculi is given in the following table:

100 pure urates.	11 pure oxalates.
126 " phosphates.	163 mixed.

In 338 cases the bladder was infected; in the remaining 62 the urine was sterile. Two hundred and fifty-eight patients suffered with prostatic hypertrophy. In more than one-half of the cases the bladder was insufficient. This bladder insufficiency, according to von Frisch, plays an important *rôle* in the production of vesical calculi. In addition to the well-known factors producing bladder insufficiency, such as prostatic hypertrophy, stricture of the urethra, lesion of the brain and cord, the author finds chronic prostatitis a most important factor. The majority of these cases follow gonorrhea, but in a small number the prostatic lesion develops independently of any previous urethritis. Associated with the prostatitis, and dependent upon it, is a spastic condition of the sphincter, causing partial or complete retention of urine. The swollen prostate aids mechanically in producing the same result. The sudden stoppage of the stream during urination, which is usually given as an important diagnostic sign of stone in the bladder, is due not so often to the stone plugging the urethral orifice as to the sudden contraction of the sphincter. Spontaneous fracture was met with four times in this series of 400 cases of vesical calculi. Von Frisch

attributes the greatest *rôle* to growth-pressure of bacteria developing within the fissures and crevices in the production of spontaneous fracture.

Litholapaxy.—There were 306 cases in which the crushing operation was done—303 males and 3 females. The operation was completed in one sitting, following the procedure of Bigelow. In only two cases was it necessary to complete the operation after an interval of a week, and then on account of the size of the stone and the bad anesthesia. In only four cases was it necessary to give up the crushing and resort to sectio alta—in one case on account of an enlarged prostate, which bled easily; in the second because of the great hardness of the stone; in the remaining two cases the stones could not be grasped, due to the fact that they were incarcerated.

In every case the most careful aseptic precautions were taken. The following routine was carried out: Lithotrite boiled for a few minutes, evacuator soaked in bichloride, anterior urethra washed out with sterile boric-acid solution, and parts washed with soap and water, followed by alcohol and ether. Every case underwent treatment in preparation for operation. If the urethra and prostate were normal and urine aseptic, this preparation consisted of putting patient on urotropin, sodium salicylates, salol or salophen, which are continued after the operation. In cases with bad cystitis the bladder should be put in the best possible shape before operation by disinfectants by mouth and locally flushing out of the bladder. When one is dealing with a severe ammoniacal cystitis, and the kidneys are apparently affected, probably sectio alta is not as dangerous a procedure as litholapaxy.

Anesthetics used were chloroform, cocaine, along with suppositories of antipyrin. When prostatic hypertrophy or hemorrhage complicates the operation, a retention catheter is left in the bladder for drainage and for washing out the bladder.

The following complications were noted: Chills and fever, 25 times; in 23 the symptoms subsided the following day; in 2 cases the chills and fever were due to a suppurative prostatitis, and cleared up after appropriate treatment. Other complications were: epididymitis 2, cystitis 12 (in cases previously aseptic), pneumonia 2, hemorrhage 2. In one of these cases the bleeding began on the sixth day after operation, and was controlled by local measures. The other case required a suprapubic exploration. The hemorrhage was due to a bleeding vein behind a middle lobe of the prostate.

The average length of post-operative treatment was 8.2 days; the longest period was 52 days—in the case of hemorrhage just referred to. The mortality in 306 was 8, or 2.6 per cent. The causes of death were pylitis and pyonephrosis in 4 cases, pneumonia and brain embolism following a secondary sectio alta, pyemia and exhaustion each one.

Stones lying in diverticula usually require sectio alta, but it is sometimes possible to dislodge them by a sound or with a finger in the rectum. Von Frisch in several cases dislodged them by using

the evacuator. The suction was strong enough to draw the stones out into the bladder, where they could be grasped and crushed.

High Incision.—In 94 cases sectio alta was done. The preparation is about the same as for the crushing operation. The bladder is washed out with boric-acid solution, and 150 to 200 c. c. left in the bladder. A longitudinal incision is made in the median line; the incision into the bladder is also longitudinal. It was never found necessary to make a transverse incision in the recti close down to the symphysis, as recommended by some writers.

In treating the wound 12 cases were left completely open, 38 were partially closed, 44 were completely closed. In every case of complete closure of the bladder wound a retention catheter was used. In all cases the suture material was silk. Catgut is not to be depended upon, as it is often absorbed too early, and when a portion falls into the bladder cavity it may form the nucleus of a stone, a point which has been demonstrated experimentally.

The average time the patient was under treatment was 27 days, the shortest time 8 days, the longest time 64 days. In two cases, 82 and 86, respectively, the bladder wound was closed completely. Healing was per primam, and the urine was not infected.

The dangers of sectio alta are two—(1) possibility of opening of the peritoneum, and (2) infiltration of urine. The opening into the peritoneum, if closed immediately, should give no further worry.

Infiltration of urine is considered by many to be a serious danger. In the author's experience of 94 cases of calculi and over 100 cases of tumor of the bladder this accident has never been observed to follow immediately on the completion of the operation. In one case infiltration of urine first made its appearance three weeks after the operation, when the bladder, which was closed completely, and the skin wound was completely healed. This case finally did well.

The author goes into the question of suture of the bladder wound in detail, and after reviewing the literature, gives his own conclusions as follows:

(1) In patients of all ages, when the urine is clear, complete suture is indicated. Cases with moderate cystitis and bladder insufficiency demand a retention catheter.

(2) In cases with bad cystitis, ammoniacal decomposition of the urine, in ulcerative processes of the bladder and tendency to hemorrhage, in secondary changes of the kidney, partial closure and the use of Dittel's siphon drainage is indicated.

(3) In the severest forms of cystitis, with infection of the kidneys, etc., the wound should be left completely opened.

In only four cases of associated hypertrophy of the prostate did von Frisch interfere with the enlargement. These four cases presented a middle lobe projecting into the bladder, and all had complete retention. This middle lobe was destroyed by the thermocautery. In two the retention was relieved completely, while in the remaining two there was no change. In four other cases with hypertrophy of the prostate, producing complete retention, a permanent fistula was made. In two of these there was a recurrence

of phosphate stones. Two cases of hernia followed stretching of the scar.

The mortality of this series was 12.7 per cent. The causes of death were: pneumonia 2, lung embolism 1, exhaustion 2, chloroform 1 (the patient dying the day following the operation, having never regained consciousness), pyleonephritis 5, sudden emptying of the bladder 1.

Recurrence following sectio alta was 12.8 per cent., while that following litholapaxy was 8.2 per cent. In several cases the recurrence followed a combination of litholapaxy and incision, while in several cases the recurrences were repeated. Revision of the statistics, counting in these cases, gives the following:

Recurrence after litholapaxy, 30, or 9.8 per cent.

Recurrence after sectio alta, 21, or 23.3 per cent.

Zuckarkaudl's statistics give 12.6 per cent. recurrence for litholapaxy, against 22 per cent. for section.

The author finds the two methods of treatment—litholapaxy and high incision—will include all cases of vesical calculi. Where the crushing operation cannot be carried out, section will fully meet the conditions. The mortality of 12.7 per cent. for section as against 2.6 per cent. for litholapaxy does not show the relative dangers of the two operations, since incision is employed in a much more desperate class of cases. Assendelft gives a mortality of 3.6 per cent. in a series of 400 cases treated by suprapubic incision. This series includes a larger number of more favorabie cases, such as are usually treated by litholapaxy.

Von Frisch formulates the following rule:

Vesical calculi should be operated on by litholapaxy, and only when a contraindication to this procedure exists is sectio alta to be used.

The contraindications to litholapaxy are thus summarized:

(1) Very large stones.

(2) Very hard stones.

(3) Fixed stones which cannot be dislodged.

(4) Stones and foreign bodies, when the character of the latter is such as to prevent crushing.

(5) Prostatic hypertrophy preventing the introduction of the instrument.

(6) Severe forms of cystitis and kidney infections which do not improve under treatment instituted before operation.

EDITORIAL NOTE.

This large series of cases from the pen of such an authority is a contribution of great importance to the literature of vesical calculus. The results obtained in patients, 87 per cent. of whom were over fifty years of age, is remarkable. Von Frisch's statistics are in marked contrast to those of the surgeons operating in India and Russia, where stone is very common in children. But we feel that his age percentages are more generally correct. Certainly in Baltimore calculus is much more frequent late in life, and is more often dependent on prostatic obstruction. In 258 cases 65 per cent.

prostatic hypertrophy was present, but in only four of these cases was anything done for its relief. This is the inexplicable part of von Frisch's report, and probably accounts for the frequent recurrence of stone after operation—23 per cent. in the sectio alta cases (most of whom had enlarged prostate).

Sixty-three per cent. of von Frisch's cases were over sixty years, and 65 per cent. had prostatic hypertrophy. What more powerful argument could be advanced to show the causes of the stone formation, and what else than recurrence could be expected when nothing was done to remove the real lesion to which the calculus was merely secondary and often of trifling importance. The methods of von Frisch have, unfortunately, been only too common, operators, as a rule, being satisfied with the simple extraction of the calculus. The mortalities of 2.6 per cent. for litholapaxy and 12.7 per cent. for sectio alta are, as von Frisch suggests, not a fair comparison because of the greater severity of the suprapubic cases. The latter operation was done only when litholapaxy was impossible or contraindicated, and most often on account of the prostatic hypertrophy. But they are sufficient to show the great severity of the suprapubic operation and of the general anesthetic which is generally required in these very old cases (eighty-one over seventy years of age).

We are surprised to find that no use has been made of the Bottini operation, for it is in just this class of cases that it is of greatest value. When the patient is under seventy years of age and in good condition the stone can be easily removed after enucleation of the prostate through a perineal incision or the suprapubic in large middle-lobe cases. But when the patient is greatly weakened by the disease, and the kidneys considerably impaired, general anesthesia is of itself a great danger. On the other hand, it is generally possible to do both the Bottini operation and the litholapaxy under local cocaine anesthesia. In most cases the stone is crushed first, and then the Bottini operation performed at the same sitting. In some cases when the stone is hard to reach a primary Bottini operation will divide the median bar and allow the lithotrite to sink into the bas fond, where the stone may be more easily grappled. In this way not only is the more severe operation avoided, but the danger of recurrence of stone is largely eliminated.

We might mention several cases over eighty, and many over seventy, upon whom we have performed both litholapaxy and the Bottini operation under cocaine without death. In one of these cases, aged eighty-three, nineteen stones were counted with the cystoscope before litholapaxy.

The absence of any case of perineal extraction of calculi in von Frisch's report is also noteworthy, but it is evidently to be accounted for by the absence of prostatectomies. Many years ago the simplicity of the perineal route for stone-extraction was thoroughly demonstrated, but with the growth of abdominal surgery the suprapubic operation has almost completely overshadowed the older method. Now that the technique of perineal removal of the prostate has been so greatly simplified by instruments with which the prostate can be drawn into the perineal wound, and enucleated without the necessity of a suprapubic incision (as in Alexander's operation), the use of the inferior route for the extraction of calculi and vesical drainage, especially after prostatectomy, is certain to again come into popular favor. With a "double intraurethral tractor," which we have recently devised, the technique of perineal enucleation of the prostate and subsequent extraction of the

calculi has, we believe, been greatly simplified, so that we are able to remove the obstructing prostate and the vesical calculi with much less danger, and with certainty of cure.

In these cases of vesical calculi not accompanied by prostatic hypertrophy the work of von Frisch has demonstrated that litholapaxy is the simplest and most satisfactory operation. His arguments in regard to the great value of the cystoscope are certainly very true. In no case should litholapaxy be done without previously determining with the cystoscope the number and character of calculi present, that they are not incarcerated in diverticula, nor mere incrustations covering vesical tumors or prostatic lobes. If all cases were examined cystoscopically before their departure for home, there would be fewer recurrences from fragments that have been left or stones that have been overlooked.

Society Reports.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

SECTION OF CLINICAL MEDICINE AND SURGERY.

MEETING HELD DECEMBER 19, 1902.

Combined Intra and Extraperitoneal Method of Removing Ureteral Calculi—Dr. Martin.—In 1884 Henry Morris of London said the possibility of removing an impacted ureteral calculi depended on its situation; that the most common site for the calculus was either near the pelvis of the kidney or near the bladder; that the calculi in the immediate portion of the ureter were beyond reach of the surgeon.

The present case is one of complete impaction in the intermediate portion of the ureter where it crosses the brim of the pelvis. The patient was taken ill on November 20, 1901, and was thought to have appendicitis. Later on his physician made a diagnosis of renal colic, and was unable to relieve his excruciating pain even with two grains of morphine. He was quieted with chloroform. There was no rigidity or marked tenderness in spite of the severe pain. The temperature and pulse were normal. The paroxyms of intermittent pain and vomiting lasted for over twenty-four hours. No *x*-ray could be obtained. The incision was made through the right rectus, and the stone was easily localized at the brim of the pelvis. It was tightly impacted lying crosswise in the ureter. A skin incision was made along Poupart's ligament as high up as the anterior spine, the peritoneum was stripped back, and the ureter was opened extraperitoneally. When the calculus was removed there was a gush of urine. The abdominal wound was closed and healed per primum. A drain was left in the inguinal wound, but there was no leakage.

In spite of Cabot's recommendation of Israel's incision, it seems to me that

the intra- and extraperitoneal method is better, for it avoids working in the dark.

Subclavian Aneurism—Dr. Robins.—The patient denies syphilis, but has suspicious scars on his body. He has paroxysmal attacks of dyspnea, but no dysphagia. There is a fullness and pulsation above and below the left clavicle. There is a double murmur at the apex and at the aortic area as well as over the pulsating area described. The heart is not enlarged. There is no Corrigan's pulse. External to the sterno-mastoid muscle on the left there is a thrill. The radial pulses are unequal. The patient is hoarse and has a brassy cough, but there is no abductor paralysis of the left vocal cord.

The second patient is a male of fifty-seven years, admitted to Bayview Hospital with a diagnosis of pernicious anemia, for which he had been treated in another hospital. On admission the patient had a neuritis, which may be easily accounted for by the arsenical medication previously given him. His skin, formerly of a light complexion, became jaundiced before admission to the hospital, but cleared up later, and now presents a striking bronzed color. He has nephritis and an irritable bladder. The teeth are bad. The pulse is variable, and the patient is very weak. Since admission the neuritis has been disappearing and the complexion growing darker. The blood examination showed 4,500,000 red corpuscles, 11,200 leucocytes, with a normal differential count, no nucleated reds or poikilocytosis; hemoglobin, 85 per cent. Examination of gastric contents negative. The tuberculin reaction was very positive, the temperature rising above 103° F. For this rising, as well as on account of the pigmentation of the skin and the extreme weakness, the previous diagnosis has been changed to that of Addison's disease.

Dr. Beck: The diagnosis of pernicious anemia made at the City Hospital was based on the blood-count, which showed 1,500,000 red corpuscles. The patient was very pale, but well nourished, and was rapidly improved by arsenic. He had parathesia, exaggerated, and later loss of reflexes, the nervous symptoms being evidently due to degeneration following faulty nutrition in the lower part of the cord.

Dr. Pleasants remarked that the patient was slightly jaundiced on admission to the City Hospital, and had later grown very pale. The bronzing of the skin now present might be due to the use of arsenic.

Multiple Exostoses—Dr. Wholey.—Exostoses are really osteomata appearing on the surface of the bones and involving a limited area. They may be either osteoma durum, spongiosum, or myelosum. Their tendency to be located at the insertion of muscles gives rise to the idea that they were bone spines turned outward. They occur generally during the period of rapid growth, but are found at all ages, even in the intrauterine fetus. Multiple exostoses usually occur in girls between the ages of three and four years. The etiology is obscure. Tillman has emphasized hereditary influences. They are usually spongy growths, and are found near the centers of ossification. The vertebrae are rarely affected. On the skull a few flat elevations may occur, and on the scapula they may assume a pedunculated form.

When on the extremities those on the upper limbs point downward, and those on the lower limbs upward, as a rule.

The present case is a Russian girl of nineteen years, a needle-worker, who came to the Johns Hopkins Dispensary on August 23, 1902, complaining of pain in the chest and nervous indigestion. Her family history is unimportant. She is subject to nightmare. The patient called attention herself to the lumps on her fingers, which were distributed as follows: right hand: index finger, two; middle finger, one; ring finger, two; left hand: index finger, two; middle finger, one; ring finger, one; on each humerus at the inner surface of the upper extremities; on the right clavicle, three at the innner and two at the outer; on the left clavicle, two at each end. A similar symmetry exists in the bones of the lower extremities, the exostoses occurring at the lower end of both femurs, at the upper end of the tibia. The growths measure 1x0.5 cm., and all occur on the extremities with the exception of a few on the ribs. They occur on the dorsal aspect of the fingers in each case. The symmetrical arrangement is evident from the distribution. The lower end of the femur was greatly hypertrophied, and a small spicule of bone projects upward on its inner side. The upper end of the tibia was rough and surrounded by several protuberances. A full discussion of the subject will be found in Schuchardt's monograph in the *Deutsche Chirurgie,* Vol. XXVIII.

Dr. Ruräh: In a recent case described by Cannois and Roy (*Nouvelle Iconographie de la Salpêtrière,* 1902) there was malnutrition of the bones, with spontaneous amputation of some of the phalanges. There was also a loss of temperature sense. The writers emphasize hereditary influence. The grandmother, in their case, had had exostoses and tuberculosis; all her children had both; the second son, in turn, having ten children, each of whom had exostoses. They conclude (a) that the pathogenesis is not known; (b) the affection is probably due to the disease of the gray matter of the cord; (c) it often occurs in association with tuberculosis.

Dr. Baer reported two cases—one in a male of thirty-five, who had considerable atrophy of the bones, the radius and ulna being bent in the middle; the other a male of ten, who had multiple exostoses on all the long bones, especially at the epiphyses. Symmetrical arrangement was striking in the latter case.

Pathological Specimens from Two Cases of Aneurism—Dr. Hirsh.

Two Successful Cases of Rectopexy—Dr. Earle illustrated by drawings the operation he had done in two cases, following the method described by Tuttle. He stated that aggravated cases of prolapse of the rectum were considered hopeless a few years ago. If the mucosa alone was prolapsed, Whitehead's operation could be done, but for prolapse of the entire rectum rectopexy was necessary. Fowler of Brooklyn first performed the operation.

Dr. Earle's first case was a woman who had been troubled for six or eight years with the prolapse projecting two inches. The second case was a male of fifty who had been troubled from boyhood, the prolapse extending six inches, preventing the patient from active work.

MEETING HELD JANUARY 16, 1903.

Dr. William Royal Stokes in the chair.

Obstruction of the Inferior Vena Cava—Dr. J. Hall Pleasants.—The patient is a young man of about twenty-five years, who presents a tortous condition of the veins of the lower part of the abdomen and of the lower extremities, most marked in the left thigh. He has no varicocele. The direction of the blood-stream is upward. The case is difficult to explain except by assuming obliteration of the inferior vena cava. There may be thrombosis of both iliac veins, but this is unlikely. The obstruction may be caused by (1) pressure of a tumor, (2) congenital absence of the vena cava, (3) by thrombosis of the vena cava, which is not very rare. In 1889 Dr. Welch reported 140 cases. Such thrombosis is rarely primary, but is usually an extension of thrombosis in the pelvi, or femoral veins, occurring, for instance, after puerperal infection, or even influenza. The symptoms in an acute obstruction would be similar to those in thrombosis of the femoral vein in typhoid. Although the thrombosis is in the vena cava inferior, still the edema and swelling are often unilateral. The iliac vein is probably obliterated further down on the left side. The compensatory circulation is chiefly through the superficial veins and through the azygos, and also by the lumbar and vertebral veins. In some cases there is but little superficial dilatation of the veins with complete obliteration of the vena cava. A case very similar to this one was reported by Dr. Scudder in the *Archives of Pediatrics* (1891, XIII, 272).

Dr. Hunner remarked that a case in Dr. Kelly's service at the Johns Hopkins Hospital had had unilateral dilatation of the veins and of the lower quadrant of the abdomen. Her vulva was greatly distended, and she had in addition typical congenital nevi. At operation the dilatation was found to be entirely a congenital malformation of the veins. This case might be similar.

Dr. Ford reported a recent case operated on by Dr. White in Philadelphia in which the condition was transmitted from mother to daughter.

Uncinariasis.—Dr. J. B. Briggs showed the case exhibited at the Johns Hopkins Hospital Medical Society on December 1, 1902. The patient's blood-count on admission was, reds 2,750,000, hemoglobins 35 per cent., leucocytes normal. Nine courses of thymol treatment have been given. The blood-count is now, reds 4,000,000, hemoglobin 45 per cent. There are still a few eggs in the stools.

Dr. Todd gave a brief biographical sketch of Dr. Joel Hopkins, president of the Faculty 1841-1848, and presented to the Faculty a photograph of Dr. Hopkins which had hitherto been in possession of his niece.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD JANUARY 19, 1903.

Case of Intussusception—Dr. Cullen.—The patient is a boy of five years, who had typhoid at two years, diphtheria at three years, and diarrhea during the last summer. On December 23 he was taken sick with dysentery. When seen by the physician at 11 A. M., January 3, the abdomen presented nothing abnormal. At 11.30 there was a bloody stool, and at 3 P. M. the classical sausage-shaped tumor appeared. The operation was done at 4.30. Fluid blood was found in the abdomen, and ten inches of the transverse colon was found invaginated in the ascending colon. There was a mass in the colon, which on examination was found to be an inflammatory thickening. The colon was stitched to the abdominal wall to prevent recurrence.

Tuberculosis of the Kidney—Dr. Cullen.—The patient is a female with a history of cystitis. When examined a year and one-half ago there was a redness about the right ureter, and tubercle bacilli were found in the urine coming from it. There was normal urine on the left side. Dr. Osler found no signs of tuberculosis elsewhere in the body, and the patient refused operation, went home and improved steadily.

The patient has recently returned, however, and the kidney, which was removed, showed very little renal tissue. She did well for four weeks after the operation, when her temperature rose to 104° and higher. No tubercle bacilli were found in the urine of the other kidney, nor were there signs of tuberculosis elsewhere. Two weeks later rose spots appeared, and three days after that the typhoid serum reaction was positive. Blood cultures were also positive.

The only clue as to the source of infection is that during convalescence after operation the patient's father brought her a bucket of oysters packed in ice. She is now entirely well.

Carcinoma of the Kidney—Dr. Cullen.—The patient is a female of twenty-six years, who was seen at Easton, Md. Six months ago she felt a small nodule in the abdomen, and the tumor has grown rapidly. After an inspection of the other kidney a large carcinomatous kidney was removed.

Hydronephrotic Kidney—Dr. Cullen.—The patient is a female, who had "a fever" at two years, after which she was weak until puberty. A fullness then appeared in the left side, which continued until she was twenty, and during the last few years she has felt a mass in that side. At operation the ureter was found to be 1 mm. in diameter, and no fluid could be passed through it. After determining that the other kidney was in good condition, the huge kidney, 30 cm. long, consisting of a great mass of cysts, was removed. The patient is doing well.

Hematoma of the Abdominal Wall—Dr. Cullen.—There was a mass 7.5x5 cm. above and to the right of the umbilicus. The diagnosis lay between a tumor of the pancreas, kidney, and gall-bladder. At operation the muscles were found adherent to the tumor, and 500 c. c. of tarry bloodclot escaped.

A skin incision was made on the left, and it was determined that the mass was extraperitoneal, lying between the peritoneum and the transversalis fascia. Gallstones were found and removed.

This is the first case which I came across in which there was hematoma without known origin and simulating an abdominal tumor.

Dr. Osler remarked that the hydronephrotic kidney must be clearly distinguished from the congenital cystic kidney. In the former the obstruction might be intermittently overcome and the fluid allowed to flow.

Removal of Foreign Bodies from the Eye—Dr. Randolph.—The first recorded use of the magnet for the withdrawal of foreign bodies was by MacCowan in 1874. He made an incision over the sclerotic and used an ordinary magnet. In 1879 Hirshberg used an electro-magnet for the first time. This was merely a magnetic probe, and its point had to be near or in contact with the foreign body. It was used until 1893, when Haab introduced his giant magnet, weighing 200 pounds. The disadvantage in this is that the foreign body follows the shortest path from its position to the point of the magnet, frequently producing additional injury.

In the four cases here reported Sweet's modification of the method was used. He locates the foreign body accurately with the *x*-rays, makes an incision opposite to it, and then allows the magnet to act. One of these cases was seen in June, 1902, the other three during the last few months. All were employed on the Baltimore & Ohio Railroad. In three of the cases a general anesthetic was used, although it is said that cocaine may be used ordinarily. The great advantage in extracting early is seen from the fact that the men who were operated on three or four days after the accident have good vision, while one who was not treated for eighteen or nineteen days has lost his sight. Even if the vision be not preserved, it is a great advantage to have a sightly eyeball. Haab has reported 165 cases treated, fifty-five of whom are recovering their sight.

Uncinariasis in Southern Cities—Dr. Stiles.—Hookworm disease was described on the papyri of ancient Egypt. In 1893 Blickman of St. Louis described the first case in this country. It was imported and was due to uncinaria duodenalis. In 1896 five or six cases were reported in Buffalo, but were not fully authenticated. In 1898, when the war with Spain began, the bureau of animal industry warned the War Department of the danger from hookworms, which was likely to threaten our soldiers in Cuba and Porto Rico. During that year Ashford found the typical anemia and eggs of hookworms in the stools in Porto Rico. He published nineteen cases, and warned the medical profession of the danger from soldiers returning home. As the troops returned from Cuba further cases were reported here and there, thirty-five in all having been published up to May, 1902. At this time a new parasite was described almost simultaneously in Galveston, St. Louis, and Porto Rico. Permission was obtained from the government to thoroughly examine the triangular region, whose angles were at these three points. Four days were first spent at the Richmond penitentiary, where 1200 men were seen, but no cases detected. At one of the copper mines in North Carolina a case was found, and from that point onward throughout the mining country a large number of typical cases were detected.

It is an interesting fact that the cases were always found in sandy soil, never in clay regions. This brings to memory that when the seal fisheries

were such a subject of controversy between England and the United States a study of their diseases shows that 17 per cent. of the seals died of uncinariasis, and that the pups always died on sand rookeries. Among the so-called dirt-eaters in the sandhills of the South forty cases were found in three days. One family of eleven dirt-eaters were all affected with the disease.

A study of the employes of the cotton mills of Macon, Ga., showed that the children who came from sandy districts were the only ones affected, and that their anemia, which had been striking when they came to the mills, has steadily decreased after they went to work. Very few cases were found in negroes. After a short experience in observing the typical appearance of persons affected with uncinariasis it became possible to pick "suspects" out of a large crowd without any difficulty.

In an orphan asylum which was visited the children were lined up in two rows, and by merely walking down through the lines it was possible to pick out suspects, and by examining their feces later determine the presence of the disease.

The result of the trip may be summed up as follows: (1) Uncinariasis is pre-eminently a disease of the sandhills; (2) The cases occur in groups, like those of trichinosis; (3) It is more severe in whites; (4) Although usually described as a disease of adult males, the severest cases on this trip were found in women and children; (5) Infection is severer in summer, twenty-four hours of freezing temperature killing the eggs and larvae; (6) Miners, farmers, brickmakers, and children are most often affected; (7) It is severer in blondes.

In regard to the symptoms, the cases may be grouped as light, medium or severe: (a) The light cases are apparently well, but have eggs in the feces. They may have diarrhea, but their most striking symptom is that they cannot work long or walk far without becoming tired. (b) The medium cases show little more than an anemia which resembles other secondary anemias. (c) The severe type of cases were well described in 1868 by Pitt, who wrote about the dirt-eaters of the South. The patients are undergrown, stunted both physically and mentally; the complexion is either a chalk-white, lemon-yellow, or tan, presenting the same features that may be seen in pernicious anemia. The skin is like parchment. There is grave anemia of all the visible mucous membranes; the eye is dry, and has a cadaveric, fishlike stare, like that seen in alcoholics. This was described as early as 1835 by Southern writers. The cases can be distinguished from those of other anemias by the appearance of the eye alone. The expression is something like that seen in the eyes of a patient suffering with an epileptic attack. In this connection it is interesting to note that the negro "mammies" of the South depend on the dilatation of the pupil for the recognition of the presence of worms. It seems likely that there is a condition of toxemia. Italian observers have noticed that the urine of patients affected will produce anemia in animals, so that we have to deal with the toxemia as well as with the anemia. The pulsation of the veins in the neck can be seen, and the patients often complain of a "jumping at the neck." The ribs are prominent, the thorax emaciated, the abdomen swollen and edematous. Hair is absent from the body except on the head, the pubes and legs being quite smooth. The extremities are emaciated, and the legs, especially about the ankles, edematous. The testicles are rudimentary, the penis very short. In a boy of sixteen, for in-

stance, the testicles may not have descended. The breasts of a girl of twenty are like those of a girl of eleven, and the vulva like that of a girl of nine or ten. As to the digestive system, the appetite is either ravenous or light. There is usually some idiosyncrasy, the patient having a great leaning toward pickles, lemons, salt, rosin, or even clay. In one case the patient was known to have eaten live mice. Indigestion is common, and is accompanied by pain in the epigastrium. The stools are reddish brown.

As to the diagnosis, it would be foolish to expect the rural practitioner to use the microscope. For him the following test has been devised and will give a correct result in 70 per cent. of the cases: One ounce of the feces are placed upon a piece of blotting-paper and then shaken off. If the patient have hookworm disease, the paper is stained red-brown, as if with blood. There may be either diarrhea or constipation.

As to the circulatory system, the pulse was found anywhere between 80 and 132, frequently 120, unaccompanied by a rise of temperature, although occasionally there was a rise to 102° to 103°. There is marked venous pulsation, and hemic murmurs are often heard. It was impossible to make a blood-count on this trip.

Skin.—Ulcers on the legs are frequent. If cut or bruised, the skin wound heals very slowly.

Nervous System.—Usually stupid; the patients are, in addition, either shy or excitable. They have headache, and some dizziness, and are generally unable to study.

Genital System.—There is irregular menstruation, many girls attaining the age of twenty-two before its commencement. Girls of twenty-six were found who menstruated only in winter. Sterility is evidently unimpaired, for in the sandhills many families were found with from three to twenty children.

It is not true that the diagnosis can only be made with the microscope. If there be a dirt-eater in the family, and several in the family have anemia, if they live in sandy soil, and if there be no privy, you are safe in saying that the whole family have uncinariasis. With a little practice you can make a diagnosis in 75 per cent. of the cases, especially if the blotting-paper test be used.

Treatment.—Thymol and male-fern are the two drugs used, the former being preferable. Two grains of thymol are given at 8, and again at 10, followed by a dose of castor oil at 12. These may be repeated in a week. With regard to the administration of thymol in brandy, it is known that a small dose thus given will throw a dog into convulsions, but there will be no harmful effect without the brandy. It is therefore safer to give the drug in powder form.

Prophylaxis.—(1) Uncinariasis is a disease of the country, not of cities, on account of the drainage facilities of the latter. (2) Dispose of the fecal matter in infected localities; this will prevent a spread of the disease. The simplest method of disposal is to spray the feces with oil and burn them. (3) Get the people in an infected locality to build privies, to use them, and occasionally to clean them.

Book Reviews.

Text-Book of Medical Jurisprudence and Toxicology. By John J. Reese. Sixth edition. Revised by Henry Leffman. Price $3. Philadelphia: Blakiston's Son & Co.

The sixth edition of this text-book has recently appeared, and in it are condensed the *essentials* of the science in simple and familiar style. The author discusses the phenomena and signs of death, medico-legal investigations, causes producing violent death, and death following electrical shock, starvation, and other causes. The subjects of infanticide, rape, insanity, malpractice, and kindred subjects have been written to meet the wants of students of legal medicine. In the chapter on recognition of blood stains we fail to see any mention of the most important and probably only method of recognition of *human* blood—that is, by hemolysis.

The subject of toxicology gives the symptoms, treatment, and post-mortem appearances of poisoning by drugs. The employment of alcohol in phenol poisoning is an important advance. It is also to be noted that the long-current belief in the antidotal value of atropin in morphine poisoning is practically abandoned. H.

Diseases of the Stomach. By John C. Hemmeter, M.D., P.H.D. Philadelphia: P. Blakiston's Son & Co. 1902.

In this, the third edition of Dr. Hemmeter's work, the author has emphasized even more than hitherto the necessity and the means for reaching the differential diagnosis in the various gastric disorders, and new material has been added to the chapters on ulcer and carcinoma, and a new article on gastric lipase. This work, as we have said in reviews of the previous editions, is most complete in all details, and all that is of importance in connection with this subject has been incorporated. As in the former editions, the book is divided into three parts—the first being devoted to a consideration of the anatomy and physiology of the digestive organs and the methods and technique of diagnosis; the second part to a discussion of the therapy and materia medica of stomach diseases, while the third part, which takes up more than half the book, is devoted to the gastric clinic, in which the various organic and functional disorders of the stomach are carefully and exhaustively considered.

The Medical News Visiting List for 1903. Weekly (dated, for 30 patients); Monthly (undated, for 120 patients per month); Perpetual (undated, for 30 patients weekly per year), and Perpetual (undated, for 60 patients weekly per year). The first three styles contain 32 pages of data and 160 pages of blanks. The 60-patient Perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil, and rubber. Seal-grain leather, $1.25; thumb-letter index, 25 cents extra. Philadelphia and New York: Lea Bros. & Co.

The Medical News Visiting List is always a welcome visitor to this office, and year after year we are impressed with its excellence. It not only enables

the physician to keep an accurate record of his professional work, but contains much valuable information that may be utilized at a moment's notice. After having carried one of these Lists in our pocket for many years we feel that we can conscientiously recommend it to the members of the medical profession.

Practical Dietetics. By W. Gilman Thompson, M.D. Second edition. New York: D. Appleton & Co. 1902.

In the second edition of this eminently practical book Thompson has added much new matter, and has brought the whole work thoroughly up-to-date. In this book foods and food preparations are first considered, and the various classes of foods, water, salt, and animal foods and vegetable foods are carefully discussed. Stimulants, beverages, and condiments are next taken up, especial attention, of course, being given to the value of alcohol as a food and as a stimulant. The next chapters, in turn, discuss cooking, food preparation and preservation, the quantity of foods required, foods required for special conditions—conditions which especially affect the digestion; the general relation of foods to special diseases—diseases which are caused by dietetic errors, and the administration of food for the sick, after which the diet in the various diseases is considered, about one-half of the book being given up to this discussion. The book is eminently practical, and should prove very helpful to the practitioner in giving him a much clearer view of this important branch of therapeutics. B.

Bacteriological Technique: A Laboratory Guide for the Medical, Dental, and Technical Student. By J. W. H. Eyre, M.D., F.R.S., Edin., Bacteriologist to Guy's Hospital, and Lecturer on Bacteriology at the Medical and Dental Schools, etc. Octavo of 375 pages, with 170 illustrations. Cloth, $2.50 net. Philadelphia and London: W. B. Saunders & Co.; Baltimore: Medical & Standard Book Co. 1902.

We consider this book a good laboratory guide for the beginner in bacteriology. The methods described are for the most part those in vogue in most laboratories, and, with the numerous and practical illustrations, the student will find no difficulty in carrying them out. Even the more advanced student will find many useful hints scattered among its 375 pages. We gladly recommend the work to students. H.

A Text-Book of Materia Medica, Therapeutics, and Pharmacology. By George Frank Butler, Ph.G., M.D. Fourth edition. Philadelphia and London: W. B. Saunders & Co. 1902.

This book "has been undertaken with the immediate object of supplying the student of medicine with a clear, concise, and practical text-book adapted for permanent reference no less than for the requirements of the classroom." The book is well written, and seems to fulfil these requirements, although any work on materia medica is bound to contain an enormous amount of material which could much better be left out, and every such work that appears accentuates the necessity for a careful revision of the Pharmacopeia and the elimination of an enormous amount of useless material. B.

MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

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BALTIMORE, APRIL, 1903

THE SMALLPOX OUTLOOK.

THERE seems a fair prospect of a summer campaign against smallpox in Baltimore. The disease is about as prevalent in neighboring States as it has been at any time in the past four years. During that period the disease has appeared in Baltimore some fifty times, in as many parts of the city. Not a single nidus of infection has developed from these invasions. Giving the fullest credit reasonably due to the very efficient Health Department, it is difficult to believe that Baltimore's remarkable exemption from smallpox is wholly due to official vigilance and activity. Luck must have played some part in the history. The circumstances which have scored against other well-officered cities must score against Baltimore if the game be long enough. Error of diagnosis has happily been rare in Maryland, and the vicious blunder of contention for a false diagnosis has not arisen once. But the mild cases which seek no medical advice have laid the foundation of serious outbreaks elsewhere, and against this mischance there is no defense. Of five cases discovered in Baltimore in the first two weeks of March, four had their origin in an unreported case which had been treated as chicken-pox. When this foundation case was seen it presented the unmistakable characteristics of a freshly decrusted universal variolous eruption. The movements of this case had been in nowise restricted. In the course of four or five weeks she must have endangered a large number of persons, and the four whose cases have come to light do not probably represent the whole crop from that seeding. This occurrence is disquieting.

So far as the safety of the city depends upon good men in official positions, we have nothing to fear. A great deal of vaccination has been done in the last four years, and in this there is some assurance. Nothing further can be said for the defenses. In a city of 600,000 the hospital accommodations are about equal to those of Cumberland for her population of 7000. We can put forty cases of smallpox into the Quarantine Hospital. There is no place of detention for suspects or contacts. The Health Department must employ methods of more or less secrecy or else fight for space in which to observe half a dozen doubtful cases. There is no proper means

of transportation to the Quarantine Hospital. One tugboat serves the quarantine officer for inspection of vessels and for the conveyance of sick persons.

If the incidence of smallpox upon Baltimore should reach but one-tenth part of that recently experienced by other cities of equal size the Health Department would be obliged to care for the great majority of cases in their city homes, with all the adverse chances and the excessive cost of domiciliary quarantine, and to the vastly greater disturbance of business conditions.

THE TYPHOID EPIDEMIC AT ITHACA.

A SPECIAL study of the typhoid epidemic at Ithaca has been made for the *Journal of the American Medical Association*. Two instalments of the story have been printed in the issues of March 14 and 21, and these afford considerations that may well be taken to heart by many American cities. In the matter of civic decency Ithaca is not inferior to the average town of its size. On the contrary, Ithaca is in respect of sanitary works superior to most American cities of 15,000, and her location and surroundings are very advantageous. The public water supply has been impure for years, and the authorities have been advised repeatedly that from this source danger constantly overhung the city. This warning has been emphasized by the occurrence of typhoid fever year after year. The mortality seems to have been rather light, and, like city officials in general, the town fathers of Ithaca took no heed of the sickness which was not "unto death." The physicians, too, were guilty of that wretched purblindness which all over the United States is a chief accessory to the annual typhoid slaughter. They saw a great deal of continued fever which did not present the literary characteristics of "genuine typhoid," and this disease came to be known as "Ithaca fever." About January 1, 1903, some five or six cases were satisfactorily identified as "genuine" typhoid, and on February 2 a local paper announced "the epidemic of typhoid fever is spreading with terrible rapidity throughout the city. The physicians are overworked, the hospitals are overcrowded, nurses are lacking to care for the sick." The death-roll by March 14 had mounted to fifty-one, and the recorded cases were about 800. Among the dead were twelve students of Cornell University, and to these must be added the deaths of eight other students who had returned to their homes.

Cornell University confers a great distinction upon Ithaca, and Cornell gave fame to Ithaca's typhoid. The town fathers are now very much alive to their sanitary responsibilities. They will use all speed to secure a pure water supply, and meanwhile they have passed an ordinance making it a mis-

demeanor for anyone to drink or to supply another a drink of unboiled water. The penalty is $50.

The Commissioner of Health of New York has a representative at Ithaca, and the work of suppressing the epidemic seems well on toward success. The lessons of the epidemic will soon be shelved with other dismal records. Fifty miles from the scene, and fifty days after their occurrence, fifty deaths will have no moving significance. "Practical men" want *modern* instances, with all the accessories, "epidemic," "frightful rapidity," "physicians overworked," "hospitals crowded," "nurses lacking." Such things come to those who wait. Next!

THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The meeting of the American Medical Association at New Orleans on May 5, 6, 7 and 8 should attract a large delegation from hereabouts. The program has not yet been announced, but there is no doubt about its unusually attractive character. Among the subjects for which full discussions are arranged are dysentery and uncinariasis. The bacillary and the amebic dysenteries are both to receive consideration. Flexner and Anders of Philadelphia, Knox and Marshall of Baltimore, and Harris of Atlanta have papers upon dysentery. Stiles and Claytor will have papers on uncinariasis.

Typhoid fever, yellow fever, and plague are to share a full day's consideration at a joint session of the Sections on Medicine and on Hygiene. The offerings of papers have been remarkably large, far exceeding the limits of the program.

The National Conference of State Medical Examining and Licensing Boards will meet on the day preceding the meeting of the association, and this will draw a considerable additional attendance.

The local committee of arrangements and the profession of Louisiana and neighboring States have prepared for an enthusiastic reception, so that the prospects are most inviting. A visit to New Orleans in May is, aside from the meeting of the association, an attractive proposition. The winter crowd of tourists will have disappeared by that time, but the attractions of the place are none the less on that account. There is, perhaps, no place in America where the transient can invest his time, aside from business, more pleasantly.

The place is full of historic and traditional interest, and of picturesque surprises. The hotels are good, but no one would be content with their comfortable fare in a city which offers coffee and crullers at the French Market, a Begue breakfast, a meal at Bezandun's, or Victor's.

The transportation arrangements are satisfactory—one fare for the round trip, with a privilege of extension to May 31.

Medical Items.

Editor Maryland Medical Journal:

Dear Sir—I note in the summary of results of the June, 1902, examination as published in the JOURNAL March, 1903, No. 57 should have an average of 92¾ instead of 80¼.

Yours truly,

J. McP. SCOTT,

Secy. Board of Med. Examiners of Maryland.

THE Pennsylvania legislature has appropriated $50,000 to the State Board of Health for the purpose of suppressing smallpox. Next!

THE Naval Academy at Annapolis is to have the best-equipped hospital in the navy. The cost of construction and equipment will be $200,000.

DR. FRIEDERICH MUELLER, assistant to Dr. Adolf Lorenz, will, it is said, become professor of orthopedic surgery in the University of Chicago.

DR. SIMON FLEXNER has announced a serum for the cure of infantile diarrhea and dysentery. The serum will be tried during the coming summer.

ITHACA, N. Y., now has an ordinance making it a misdemeanor, with a penalty of $50, to drink or to offer another a drink of raw water from Six-Mile creek. Forty-rod whiskey has not advanced in price.

DR. H. W. DORSEY died at his home in Hyattsville, Md., on March 21, aged seventy-one years. He was a native of Frederick county, where he formerly practiced medicine until about nine years ago, when he retired.

DR. FREDERICK PETERSON, president of the New York State Lunacy Commission, made an address on Saturday evening, March 21, before the Section on Neurology and Psychiatry of the Medical and Chirurgical Faculty. His subject was the "State's Care of the Insane."

PLANS for a new hospital at Cambridge, Md., are now completed. The site is most attractive, at the eastern end of the town on a high bank, commanding a beautiful view up and down the Choptank river. The building is to have three stories and a basement, with accommodations for thirty-five patients. The cost is estimated at $40,000.

THE movement for the erection of a county hospital at Elkton, Cecil county, is making good progress. The officers of the board of directors are: President, Mr. G. A. Blake; secretary, Dr. Howard Bratton; treasurer, Mr. C. B. Finley. The committee to raise funds includes Mr. John S. Wirt.

THE Tuberculosis Commission of Maryland held a conference at the hall of the Medical and Chirurgical Faculty on March 10 for the purpose of consulting the hospital and dispensary physicians, the health authorities, and charity workers concerning the best methods of collecting and utilizing information concerning tuberculosis in Baltimore.

THE Mexican government still distrusts (and with good reason) the representations concerning plague at San Francisco. Quarantine is in force throughout the Mexican Republic against vessels from San Francisco. The Superior Board of Health of Mexico is said to be in possession of information that plague existed there in January last, notwithstanding the official reports from both Washington and San Francisco that no case of plague had been discovered since December 11, 1902.

THE Book and Journal Club met at the hall of the Medical and Chirurgical Faculty on Thursday, March 26. Dr. Alfred Stengel of Philadelphia read a paper on "Some Old Instruments and Methods for Treatment of the Stomach; Gastric Sensations Interpreted as Live Animals in the Stomach." Dr. Wm. Osler presented to the library 123 theses of American students at the University of Edinburgh between 1760 and 1810. Dr. Henry Barton Jacobs spoke upon "A Century of the Faculty of Medicine of Paris, 1794 to 1894." A smoker followed.

DR. CHARLES H. OHR died at Cumberland, Md., on March 3, at the great age of ninety-three. Dr. Ohr was born October 19, 1811, and graduated at the University of Maryland in 1834. He was president of the Medical and Chirurgical Faculty of Maryland in 1872. Besides being for many years the oldest living member of the Faculty, he was the oldest past grandmaster of Masons in the United States. Dr. Ohr published in *American Journal of the Medical Sciences* an account of the epidemic of cholera in Cumberland in 1853. He was a State senator from 1864 to 1867, and was mayor of Cumberland in 1862.

Dr. George W. Bishop of Snow Hill, Md., died suddenly in the office of the treasurer of Worcester county on March 6, aged seventy-one years. He was a native of Worcester county, and graduated in medicine at Jefferson Medical College, Philadelphia. Dr. Bishop represented Worcester county in the State senate in 1882 and 1884, and during the administration of President Cleveland was assistant treasurer of the United States at Baltimore. Dr. John Bishop, surgeon to the Police Department of Baltimore, is a son of the deceased.

The Ithaca epidemic of typhoid fever has brought about the introduction at the general assembly of a bill to prevent the further pollution of streams. The bill is supported by the State and County Medical Societies and provides that no person, shop, factory, or industrial establishment shall discharge any sewage, garbage, offal, decomposable or putrescible matter into any of the waters of the State after having been forbidden by the local authorities. The act will not apply to pollutions already in existence, but may operate in case of change in the character or amount of material discharged. Alterations or modifications in sewerage, etc., can be authorized only by permit of the Commissioner of Health, to whom all plans must be submitted.

The Samuel D. Gross prize of $1200 will be awarded by the Philadelphia Academy of Surgery on January 1, 1905, for the best original essay, not exceeding 150 printed pages, octavo, illustrative of some subject in surgical pathology or surgical practice, founded upon original investigations, the candidates for the prize to be American citizens. The successful competitor must publish his essay in book form and deposit one copy in the Samuel D. Gross Library of the Philadelphia Academy of Surgery. The essays must be written in English and should be sent to the Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery on or before January 1, 1904. Each essay must be distinguished by a motto and accompanied by a sealed envelope bearing the same motto and enclosing the name and address of the author. The trustees are Drs. John B. Roberts, William L. Rodman and William J. Taylor.

Dr. Theodore Gaillard Thomas died suddenly at Thomasville, Ga., on February 28, aged seventy-one years. Dr. Thomas was one of the most noted American physicians of a generation ago. He was born in South Carolina in 1832 and graduated in medicine at Charleston in 1852. After a term as resident physician at the Emigrant Refuge Hospital, on Ward's Island, New York, he spent eighteen months in medical study abroad. Returning, he began practice in New York. In 1863 he became professor of obstetrics in the College of Physicians and Surgeons, New York, and was later transferred to the newly-established chair of gynecology. His great work on Diseases of Women was published in 1868, and gave him a world-wide reputation. Seven American editions were published, and it was translated into five languages. In November, 1902, a dinner was given in honor of his seventieth birthday. Some two hundred friends gathered to do him honor on that occasion.

At the last (fifty-third) meeting of the American Medical Association, held at Saratoga Springs, June 10-13, 1902, a joint resolution from the Sections of Cutaneous Medicine and Surgery and Hygiene and Sanitary Science was submitted to the House of Delegates, which endorsed the action of the Sections and adopted the following:

"*Resolved*, That a joint committee of six from the Sections on Hygiene and Sanitary Science and Cutaneous Medicine and Surgery be appointed by the President to stimulate study in and uniform knowledge of the subject of the prophylaxis of venereal diseases, and to present to the American Medical Association a plan for a national meeting similar to the International Conference for the Prophylaxis of Venereal Diseases, which meets again this year in Brussels under the auspices of the government of Belgium."

The Committee on Prophylaxis of Venereal Diseases consists of Dr. Henry D. Holton, chairman, Brattleboro, Vt.; Dr. Ludwig Weiss, secretary, 77 East 91st street, New York; Dr. George M. Kober, 1600 T street, Washington, D. C.; Dr. W. H. Sanders, Montgomery, Ala.; Dr. L. Duncan Bulkley, 531 Madison avenue, New York; Dr. Frank H. Montgomery, 100 State street, Chicago, Ill. The committee desires the support of the medical profession and the aid and powerful collaboration of the medical press of the country to help them in this work.

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RETAINED INTUBATION TUBES.

By William T. Watson, M.D.,
Baltimore.

In 1897 O'Dwyer read a paper upon this subject before the American Pediatric Society. He says "by retained intubation tubes following intubation for croup we mean the necessity of continuing intubation long after the disappearance of the original disease."

The cause of persistent stenosis following intubation in laryngeal diphtheria he believed to be almost solely due to traumatism. The injury to the larynx is done, he says, by a tube that does not fit. Exceptions to this rule are repeated lacerations of the larynx made by inexperienced operators during attempts at introduction or removal of the tube.

The seat of the lesion keeping up the stenosis he gives as just below the vocal cords in the subglottic division of the larynx, or that portion of the organ bounded by the cricoid cartilage. Exceptions to this rule result from injury produced by the head of the tube on either side of the base of the epiglottis just above the ventricular bands.

The anatomical constriction that exists in the cricoid region is enormously increased in the diphtheritic larynx by infiltration of the mucous membrane, which, being surrounded by cartilage, can only swell toward the center, or at the expense of the breathing space. If a tube proper for the age is forced into the larynx in a case of this nature, ulceration or sloughing of the tissues is inevitable, with possible necrosis of the cricoid cartilage from interference with the circulation. Extreme subglottic stenosis is not common, but some degree of infiltration occurs at this point in every case of croup, and the pressure varies accordingly. Whether it be sufficient to produce ulceration or not, if the circulation be seriously impeded, edema of the surrounding tissues takes place, and it is this secondary edema, especially in and around the chink of the glottis, that plays such an important part in perpetuating the obstruction to respiration.

The *slow return* of dyspnea (after removal of the tube) means that the stenosis is principally confined to the subglottic region, the

lining membrane of which cannot swell while the tube is in position, because it is compressed between the tube and the cartilage, and some time must elapse before this process can take place after its removal. The *rapid return* of the dyspnea shows the presence of edematous tissue, which drops into the chink of the glottis and obstructs respiration as soon as the tube is removed.

The most important exception to the rule that the seat of the obstruction is in, or originates in, the subglottic division of the larynx, is the development of granulation tissue which grows from the antero-lateral aspects of the larynx just above the ventricular bands. The cause of this growth is a slight ulceration or erosion of the mucous membrane at the points corresponding to the greatest transverse diameter of the shoulder of the tube from pressure exerted during the act of swallowing.

I had the good fortune to hear this paper of O'Dwyer's, and it then had considerable interest for me, for I had had one case that came under this heading—a case in which the tube was retained about twenty days and which had caused me much anxiety. Since then the subject has become of increased interest to me, for I have had two other cases that have given me enough experience and anxiety to last a lifetime. These I will briefly relate:

Case 1. J. A. W., infant boy of one year and five days, living in a suburb of Baltimore. On April 9, 1898, he became slightly hoarse and croupy in the afternoon, growing gradually worse until midnight. He was somewhat better when I saw him the following morning, and he continued better till about midnight of the 10th, when he grew rapidly worse.

At 6 o'clock on the morning of the 11th his breathing became quite labored, necessitating intubation. This was done without any difficulty. At 8.30 I gave 1000 units of antitoxine. At noon his temperature was 102°, respiration 54, pulse 136; at 10.30 P. M. his condition was practically the same.

On the following morning his temperature was normal, respiration 30, pulse 120.

He was held in an inverted position while fed with the bottle, and took nourishment well.

On the morning of the 14th, three days after the primary intubation, he coughed up the tube. I was on my way to the city, but was intercepted by telephone, and arrived back thirty-five minutes later. My patient was very much cyanosed. I intubated in a few minutes. He was much exhausted, but soon rallied.

At 4 P. M. of the same day the tube was again coughed out. He became cyanosed immediately, and it required speedy intubation to save him.

I now realized that I was dealing with a somewhat unusual case. In other cases under my care, where the tube was coughed out prematurely, an hour or more would elapse before intubation became imperative. To leave this baby for five minutes might result in its death.

I had either to resort to tracheotomy, to try a larger tube, or to remain constantly with the patient as long as the stenosis persisted. My time I regarded as nothing compared to the life and future health of this infant, who was a near relative; so I arranged to stay for some days if need be. The days were destined to spin out into weeks—weeks of anxiety and disappointment—before I was again to have my freedom.

The next day, April 15, the tube was again coughed out, with instant cyanosis, necessitating prompt intubation. The 16th was uneventful.

On the 17th, for the first time, I found diphtheria bacilli in the culture. No membrane was ever seen. Two previous and two subsequent cultures proved negative. His temperature rose again on this day to 101½°, and I gave another 1000 units of antitoxine. He seemed in distress and was not taking nourishment well, so I removed the tube. The stenosis was so rapid and complete that he almost suffocated before the tube could be replaced.

I now found it necessary to have another tube always in readiness, to have two chairs always in a convenient position, and to have two assistants dressed and ready to fly to their places at a moment's notice, day or night. The patient was kept under the eye of someone continually. If the nurse on watch took a few minutes' nap, she might find the baby dead on awaking, for it might cough out the tube and suffocate. It could utter no sound. If any of us went to another part of the house, all doors were left open, so that an alarm could be heard and answered immediately.

From this time, April 17, till May 5 the tube was removed with the extractor once, and coughed out ten times, each time being followed by rapid stenosis.

On April 26 I made the following note: "When the tube is coughed up it is with a slight cough. When the cough is hard there is evidently enough pressure of the vocal cords to keep the tube in place. No force has ever been required to insert the tube. Today I could feel the structures at the upper end of the larnyx swollen and velvety. The rapidiy-returning stenosis is probably due to the falling together of these swollen folds above the glottis."

On the 30th I noted: "The baby is quite well except for his laryngeal troubles. Has learned to cough better, and keeps the tube freer of mucus; has become accustomed to his new method of feeding, and when he wants his milk, will throw his head downward and backward and open his mouth."

On the 5th of May—twenty-four days from the time of the first operation—auto-extubation occurred at 6 A. M., and the stenosis did not recur for an hour and one-quarter. On this day the child was removed from the country to my home in the city. The nurse, father, and child sat on one seat of the carriage, while I sat on the opposite one with my instruments ready for instant operation. The necessity did not arise during the journey.

The next two intubations had to be done immediately; the following two after the lapse of fifteen minutes.

On May 8, twenty-seven days from the date of the primary operation, the tube remained out two hours and ten minutes. On this date I noted that the swelling in the vestibule of the larynx had markedly decreased.

On May 10 three intubations were performed, one of which nearly proved fatal. The baby's stomach was filled with milk, and when I inserted my finger in the pharynx vomiting commenced, and I was compelled to stop until it ceased. This occurred again and again. Finally, when his stomach was evacuated, one of my assistants became nervous and the baby was badly held. For the first time I found it difficult to introduce the tube. When it was accomplished the baby had ceased to breathe. I employed artificial respiration, and he commenced to breathe slowly. He lay unconscious for about half an hour, and then soon became apparently as well as ever.

After this episode I feared that, after all, I was jeopardizing the life of my patient more by continuing the intubation than if tracheotomy were employed. I feared that I had this time injured the larynx by the awkwardness of the last intubation. I now called Dr. Booker, who disapproved of tracheotomy, and encouraged me to continue as I had done. Later in the day auto-extubation took place, and to my surprise the stenosis did not recur for four and one-quarter hours, when the tube was replaced without trouble.

During the next six days auto-extubation took place four times. The tube remained out for various intervals, the longest being five hours.

On May 17 it remained out six and one-half hours. As the child became tired and sleepy, breathing became difficult, and the tube was returned. The string was allowed to remain in the tube, and by this it was removed in the morning. It remained out fifteen hours, and was then replaced with string attached. During the day the baby took two naps, this being the first time he could sleep without the tube.

On the next day the tube was removed by means of the string, and remained out thirteen hours, when, upon the patient's becoming sleepy, dyspnea returned, and the tube was replaced.

This was the thirty-fourth and last intubation in the space of thirty-eight days. The tube was coughed up at 6.30 the following morning, and was no longer required.

For the next five days the baby breathed freely except when crying, when it would choke up considerably. On the sixth he made a queer sound with his vocal cords. By June 5 I noted that his voice was returning, but low-pitched and mournful.

Prior to the onset of this disease the baby could say a few words, such as "mamma" and "papa." During the first few days of intubation it would attempt these words. Then it abandoned all at-

tempts at talking, and did not resume speech of any kind for the next six or eight months. This was not because of the condition of the larynx, for the child could laugh and cry clearly. It was apparently due to some psychic impression.

On October 26 of the same year (about six months later) this child was again intubated by Dr. Sanger for urgent dyspnea. Autoextubation took place in eleven hours, and the child soon recovered.

On two other occasions I have spent the night with him during attacks of croup, ready to intubate, but no operation was required. The child is now perfectly well.

Case 2. E. Moehlheinrich; boy, aged three years; had been ill with croup for forty-eight hours when I was called to see him, January 24, 1900, by his attending physician. Intubation was performed at once and 1000 units of antitoxine given. No membrane was seen, and no diphtheria bacilli were found on culture.

Four days later he was taking nourishment badly, so I ventured to remove the tube. I was compelled to reinsert it at once.

On February 4 and 18 the tube was removed, but immediately returned.

March 11, removed, but returned in one and one-half hours.

March 25, removed and returned in one hour. Breathing was better than formerly, but as it was apparent that the tube must go back, it was not kept out long enough to give the boy much discomfort.

April 14, tube was removed. The breathing was bad, and the tube was replaced as soon as possible. The patient clinched his jaws and fought us until he became unconscious. It was only then that the tube could be inserted. Artificial respiration soon brought him around.

On April 17 he came downstairs in the morning in his night clothes, carrying the tube in his hand, and pleaded with his mother not to send for the doctor. Dyspnea did not return. The tube had been worn eighty-three days. The child is now quite well.

As W. P. Northrup said, in discussing O'Dwyer's paper, "in these cases where the tube cannot be kept in or out, the human mind seems to tend in the direction of tracheotomy with great force." This natural tendency, if followed, is not, it seems, productive of the anticipated results. O'Dwyer says that it is usually the worst possible thing that can be done for the following reasons: First, the tracheal canula, if long worn, invariably produces a stricture of its own just above the wound, which is more difficult to cure than the primary one; second, if extensive subglottic ulceration exists at the time the trachea is opened, the rapid healing which follows is very likely to produce a close cicatricial stricture, if not complete occlusion of this narrow portion of the larynx.

"Slow healing around a properly-fitting intubation tube is much less likely to be followed by contraction, and is the only safe method in these cases."

In the second case, following the advice given by O'Dwyer in

his article, I had a tube constructed with the retaining swell at the distal extremity, so as to relieve the pressure on the supposedly ulcerated area. Just prior to the arrival of this tube the case had terminated favorably.

For children who have the knack of easily expelling the tube suitable for the age, instead of substituting a larger tube, O'Dwyer used the same size, with a larger retaining swell. Could I have anticipated the time and trouble connected with the first case I would have had such a tube manufactured.

Regarding the cause of the retention of the tube in the first case, I cannot bring myself to believe that it was traumatism. The tube was always inserted without force, with one exception, without especial difficulty. I had intubated forty-eight cases prior to this one, and was fairly expert. The tube, judging by its behavior, was not pressing the tissues unduly.

In the second case I was not conscious of using force, and the only time I thought I had done injury to the larynx was on the eightieth day of the trouble.

In this connection it is of interest to note that John Rogers, Jr., (*Annals of Surgery*, May, 1900), from the study of a number of cases, believes that retained tubes and retained tracheal canulae are due to the same cause, viz., a chronically inflamed and hypertrophic condition of the subglottic tissues, which is a sequel of the original diphtheritic inflammation, and not in any way a result of the operative treatment. To this rule he finds but few exceptions.

A CASE OF MULTIPLE SCLEROSIS.

By Leonard K. Hirshberg, M.D.,

Baltimore.

Multiple sclerosis, Gowers says, is especially met within the first half of adult life, and nearly of the same frequency in both sexes. Osler says it is found most commonly in young persons, cases being not uncommon in children. Osler quotes Pritchard as stating that more than 50 cases have been reported in children. Oppenheim quotes Eichhorst as stating that he had found anatomical evidence of multiple sclerosis in an eight-months' child whose mother had been affected with the disease. Oppenheim states that it occurs most commonly between the thirtieth and forty-fifth year. Sachs states that in 2000 private cases there were 13 positive cases of multiple sclerosis and 2 doubtful ones. There were 41 tabes dorsales, 69 of cerebro-spinal lues, 38 dementia paralytica, 14 intracranial tumors, 15 paralysis agitans, 37 apoplexy, and 15 infantile cerebral palsies.

Klausner, in a sudy of 126 clinical histories of multiple sclerosis, found no etiological factor in 14, some family nervous disease in 31,

congenital tendency to the disease in 23, infectious diseases as a cause in 25, overexertion in 9, cold in 13, intoxication or trauma in 49.

He found the most common ages between sixteen and forty-five. Two cases were congenital; one occurred at sixty-three, another at sixty-one.

Dana states that among 3000 private neurological cases there were only 10 cases of multiple sclerosis. In 600 outdoor patients there were only 2 cases diagnosed, and both were questionable. In Bellevue 12,000 patients were annually received, and one of Dana's assistants was constantly on the watch for them, yet not more than one or two cases were found each year.

Spiller quotes G. M. Hammond in "Progressive Medicine" as stating that in 10,000 records, extending over ten years, he found 47, or 1.5 per cent. of cases, diagnosed as multiple sclerosis.

Goodhart reported for M. Allen Starr that in 10,056 cases, 27 had multiple sclerosis. In 6 of these diagnosis was doubtful. In other words, there was one positive case in 475, one positive case in 437 males, and one such in 700 females.

The following case came to the outdoor department for nervous diseases of the City Hospital about the middle of December, 1902:

E. C., aged thirty-four, white, native; occupation, miner; unmarried; admitted to the City Hospital Dispensary for Nervous Diseases December 14, 1902. His father died of old age; mother died of heart trouble; one brother died of concussion of the brain; another brother of lead poisoning, and a third of typhoid fever. Two brothers are living and well.

Personal History.—Scarlet fever, typhoid fever, measles. Suffers with colds in the head, but no coughs. Never suffered with eye troubles, speech disturbances, dizziness, headaches, stomach or bladder annoyances of any kind before present illness. Never had any skin eruptions since childhood. Never had gonorrhea or venereal disease of any character. Worked as a miner in coal mines. Drank very heavily, especially crude alcohol, which he would obtain from lamps. Drank as much as a pint diluted with water each day, besides drinking gin and whiskey, and at times wood alcohol. Was in excellent health, except some slight nervousness which he had always felt, up to the time of injury.

While working in a coal mine seven years ago a heavy layer of slate roof fell in and struck him upon the head. He remained unconscious for twelve hours, but seemed to be in a dazed condition for quite three weeks longer. During this period he did not remain constantly in bed. At this time, although he had many attacks of dizziness and felt weak, he noticed no change in his mental powers. Two years after the accident he began to notice considerable change in his mental condition. The spells of giddiness began to increase, accompanied by headache and vertigo. These seemed to be exaggerated after unusual labor or overexertion, and he began to fall down in the attacks as often as two, three, and four times a week,

but has never lost consciousness. When the attack begins he feels a sudden weighty pressure over his head, as if his brain were caught in a vice, then everything begins to spin around and rock before his eyes, the ground seems pulled from under him, and he falls down backwards. During the attack his hands feel heavy, thick, and nervous. All objects seem double and blurred, his head goes around, knees and legs grow weak and appear to tremble, his speech grows thicker, heavier and more forced, and all his muscles feel weaker and stiffer than usual.

Ever since the injury, seven years ago, he has noticed his speech becoming thicker and more deliberate, but it seems worse during these attacks. The spells just described last from five to ten minutes unless they occur in crowded places, when they may last quite fifteen minutes. He has never vomited during an attack.

In the intervals the patient always complains of a dull, aching pressure in the head, which he says has no great element of weight or severe pain. His head has a hot, swollen, feverish feeling, but he knows it does not look so.

He has been compelled to wear glasses because of decrease in his sight, which he thinks is nearsightedness. He sees single objects as two, and sometimes three, but thinks he can distinguish colors properly.

His speech, he thinks, has been growing slowly worse, the words coming in a slow, jerky way. He can speak certain words more easily than others. Before his injury he spoke very well and clearly.

He has no trouble with his hearing. He has difficulty in swallowing, no shortness of breath, no pain or discomfort about the heart or abdomen. Rarely sighs or yawns. Is not easily frightened, but feels nervous.

He feels weak in his arms and legs, and notices that whenever he attempts to use his arms or hands they sway or wobble very much. This, he thinks, is the case more with the left hand than the right. He has great difficulty in lifting objects into his mouth or placing a glass of water to his lips because of violent trembling in his hands. He walks very unsteadily, and is compelled to keep his eyes on the ground, fearing to fall.

He says he must exert considerable strength to move his legs, and feels as if he were always pushing against something. If he turns around quickly, he falls down. His knees always feel weak and his legs stiff. After he has walked some distance the legs do not feel as stiff as when he first starts. He has never noticed any trembling of the feet or legs. His legs are always stiffer after sitting.

When writing, which he formerly did with ease and fluency, he notices that his fingers feel stiff, that his writing is jerky, the pen always scratches and moves irregularly.

He thinks he has trouble remembering things; is very absent-minded. He sleeps all through the night, except when compelled to arise and urinate, which happens three or five times. His dreams at times awaken him with a start.

During the day he sometimes bursts into laughter, which he cannot control. He has spells of uncontrollable peevishness and irritability, which he feels are very unreasonable, but cannot cast off.

He has had no paresthesia, but at times has pains about the lower leg. They are distinctly shooting pains, and do not keep him awake at night. He has never had girdle pains.

His bowels are irregular and constipated unless he attends to them. Has never lost control of his sphincter. He has had no apoplectic strokes. Has been mistaken for a drunken man. He is rather sparely built, moderately nourished, and has a serious expression; zygomata prominent. Wears convex lenses before both eyes. Face symmetrical, nose in midline. Forehead high. Answers all questions intelligently, but not immediately. Has no delusions or hallucinations. Memory for recent events, such as date, day of week, and residence, good, but slow. He is apparently not introspective or given to exaggeration; has no melancholic ideas; seems to be in excellent humor.

His speech shows a peculiar disturbance of articulation. The syllables are slightly separated, accentuated, and jerked out. The syllables do not seem to be slurred, but show a slight scanning quality. Tongue protrudes in the midline, is clean, but shows a tremor.

The pupils are equal, react consensually and directly to light and accommodation. There is considerable nystagmus lateral and vertical, but not oscillatory. He has diplopia, slight strabismus of external rectus of left eye. His field of vision is irregularly contracted, especially externally on the left. He seems to have no central scotoma for white or colors. There is no optic neuritis nor atrophy in either nerve.

There is no facial phenomenon (Kraepelin) on tapping over the facial nerve. No McCarthy reflex. There are no enlarged glands anywhere.

Flexor and extensor muscles of both upper extremities are quite strong. When patient is asked to touch his nose with forefinger he exhibits marked ataxia and a conspicuous wide oscillatory tremor as he approaches his nose. When asked to reach for various objects his hands sway in such an irregular motion and with such wide amplitude that he is compelled finally to pounce upon his object. This tremor is entirely absent when patient makes no movement with his arms. It is worse in the left arm. Stereognostic sense is normal. Supinator, triceps, and bicipital reflexes present in both arms.

The gait is slightly forced, stiff, and jerky, but not distinctly paraplegic. If he walks rapidly or turns about suddenly, he almost falls. He keeps his eyes on the ground, and walks as if pushing up stream. He at times reels and seems uncertain. With eyes closed and feet together there is considerable swaying and inco-ordination. Knee-jerks are exceedingly exaggerated, almost to a clonus. There is an increased achilles tendon jerk, but no clonus. Plantar reflex increased, but no Babinsky. Muscles slightly rigid, not weakened.

Patient writes with a forced, scratchy movement, but is able to

control tremor enough to write considerably. Formerly wrote a very fair hand. There is a slight tremor, but no paresis of the vocal cords. No sensory disturbances to pain, touch, heat, or cold; abdominal and cremasteric reflexes present on both sides.

Lungs clear everywhere. Only adventitious signs about the heart is a slight systolic murmur, not transmitted to the axilla.

Urine shows a trace of albumen, but no sugar. No hyaline or granular casts. Hemoglobin, 85 per cent.; red-blood corpuscles, 4,520,000; white-blood corpuscles, 5200.

LITERATURE.

Klausner: *Archiv für Psychiatrie,* March, 1902.
Oppenheim: *Nerven Krankheiten,* Zweite Anflage, Berlin, 1902.
Sachs: *Journal of Mental and Nervous Diseases.*
Osler: "Practice," fourth edition, 1902.
Gowans: *Lancet,* London, 1885, II, 839-854.
Gowans: "Diseases of Nervous System," 1895.
Dana: "Diseases of Nervous System," 1898.
Spiller: "Progressive Medicine," 1902.

Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

THE USE OF LESS DRUGS IN THE TREATMENT OF TYPHOID FEVER.

Bowen (*Philadelphia Medical Journal,* April 11, 1903) makes a plea for the use of less drugs in the treatment of typhoid fever. He first briefly discusses the modern views held regarding the etiology and pathology of the disease, and in the consideration of the treatment discusses the value of psychotherapy, calling attention to the fact that in the great majority of cases of typhoid fever the giving of placebos is far from advisable. He next discusses the result of the anti-typhoid inoculations as carried on by the medical department of the British army, and then discusses in turn the various drugs most used in this disease. After paying his respects to polypharmacy, on the one hand, and Christian Science and other fads, on the other, he submits a brief summary of the rational treatment of typhoid fever by the most eminent physicians of modern times, considering, first, the physiological treatment; second, the medicinal treatment. These conclusions are:

"(1) Rest; maintain the horizontal position to save the heart-strength, and do not endanger the intestines if complicated by congestion, hemorrhage, or perforation; regular change of position in weak patients. Cleanliness, plenty of pure air and light, cheerful,

inviting, and quiet surroundings as far as possible. No food usually to be given during the period of anorexia or first week or ten days of fever, then given more freely, as the case may demand, usually from one to three pints of buttermilk daily, plenty of pure water; warm sponge bath, with massage of skin and muscles, hot water to abdomen for pain, cold pack for hyperprexia and delirium in some cases. Mental rest; be specific and symptomatic; avoid negative directions to nervous patients. Psychotherapy, also, is an important factor in vasomotor disturbances, which effects normal metabolism and repair of lesions, as well as in the so-called functional disturbances. Avoid showing any signs of overanxiety by word or act if possible. Inspire confidence if you can; if not, retire at once. Serumtherapy should be employed if ever discovered and proved.

"2. No drugs as a routine, except external antiseptics and for mouth and nose and some complications. Calomel may be given in the beginning if indicated by a pale, coated tongue and constipation. Atropine if evidence of much congestion of intestines and pale skin, but not to be continued long. Atropine is also valuable in some cases of meteorism, as it may correct the atony of the muscular tissues of the intestines. Castor oil is the best laxative, and usually the best remedy for meteorism, necrosis, and ulceration, and to be used throughout the case. Turpentine internally for meteorism, and externally with hot water to abdomen for pain, also in enemata. Avoid using too freely salines for distension of bowels with liquids, or for congestion, or in plethoric conditions. Dilute hydrochloric acid if tongue is pale and flabby. Morphine and atrophine for sleeplessness in some cases, also for severe pain, or hemorrhage, or active delirium, but should be used cautiously. Strychnine may be indicated, especially during convalescence. Acetozone may be tried as a general antiseptic. Greater skill is required to carry out successfully a general physiological treatment than in the mere drug-giving, and the successful application of these principles will depend much on the judgment and tact of the physician. Success in the healing arts rests on a knowledge of the principles and clinical experience."

* * *

THE TREATMENT OF HEMOPHILIA.

None of the rarer diseases of medicine is more interesting than hemophilia, or the bleeder's disease, but up to the present time its pathology and etiology is not well understood, and no explanation has been given of the interesting fact that it affects the male children in families in which there is a history of bleeding in the males on the maternal side. It will be remembered that Wright claimed that in the majority of these cases the causative factor was to be found in a lessened coagulability of the blood, and he introduced his now well-known coagulation tubes to test the coagulation time in such cases. He believed one of the reasons for the slowness of the blood's coagulation in hemophilia was due to a deficiency in the

calcium salts, and he recommended the administration of calcium chloride in this disease. Recently Parry (*Lancet,* February 21, 1903) reports a case of hemophilia illustrating the value of calcium chloride as a local styptic. The patient was seven years old, and complained of bleeding from his lower gum of a very profuse and persistent nature, which during four days' treatment with various styptics, alum, tannic acid, turpentine, perchloride of iron, and adrenaline chloride, did not show any improvement. After five days of almost continual bleeding, calcium chloride was suggested, and was used locally in a solution of 30 grains to the ounce. After two hours' treatment of this kind the bleeding stopped, and did not return. The brother of the little boy was also afflicted with hemophilia, while his little sister was free from the disease. One of the brothers of his mother had died at the age of five from hemorrhage after the extraction of a tooth.

Another drug recently recommended for hemophilia is thyroid extract. Fuller (*Medical News,* February 28, 1903) reports a case in point. The case was a 15-year-old boy with the following family history: Four of his mother's brothers had bled to death following circumcision performed as a religious rite, and his two elder brothers had likewise bled to death under the same circumstances, although his sister had always been perfectly well.

The patient himself had never been strong; had had copious nose bleeds and swollen joints repeatedly. As the result of the slightest bruising, extensive subcutaneous hemorrhages occurred, while for a year preceding his admission to the clinic he had lost a great deal of blood through spontaneous attacks of hematuria. The usual internal styptics were administered, with no result, and as the boy seemed dying, Fuller, as the last resort, prescribed thyroid extract, 5 grains three times daily, all other medication being discontinued. After the second dose the bleeding stopped, and did not occur again, and the patient at the writing of the article was in good condition. Fuller reports another case of hemorrhage of different origin in which the same successful results were obtained under the use of thyroid extract. The reviewer himself has recently seen a case of intractable uterine hemorrhage in which the only drug which seemed to have any marked effect in controlling the flow of blood was thyroid extract.

* * *

CANCER MORTALITY.

Templeman (*British Medical Journal,* February 14, 1903) contributes a study of cancer mortality, paying especial attention to the consideration of the following questions:

1. Has the mortality from cancer increased?
2. Is the increase real or apparent?
3. If real, how is it to be accounted for?

These investigations were carried out by a consideration of the deaths as reported to the Public Health Department of Dundee

from 1877 to 1901. A consideration of these tables shows us three facts:

1. That the total cancer mortality has more than doubled.
2. That the cancer mortality of males has, on the whole, been considerably less than that of females.
3. That the increase during this time has been almost the same in both sexes.

A consideration of the prevalence of cancer in regard to the age of the individual shows:

1. That in males there has been an increase at all ages; in females only over the age of thirty-five.
2. That this increase becomes greater as age advances.
3. That from 1877 to 1887 the mortality in females was greater than in males at each age period.
4. That since 1887 the mortality in males has exceeded that in females at the age of sixty-five to seventy-five, but, except from 1892 to 1896, it has been lower at all ages over seventy-five.

Templeman next gives tables showing the portions of the body affected in both males and females, and from this and other considerations claims that the apparently large increase in the cancer mortality, especially in the male sex, is to a considerable extent accounted for by more correct diagnosis, although he does not believe that this is sufficient to account for the great increase in cancer mortality, and that this increase is a real and substantial one, although by no means so great or so alarming as the general public would believe, or as a superficial glance at statistics would indicate. In an article in the *Practitioner* of April, 1899, Newsholme inclines to the belief that "statistics, as far as they go, do not justify the conclusion that an increase in cancer mortality has occurred in recent years. They rather tend to the conclusion that the increase in cancer is only apparent, and is due to improved diagnosis and more careful certification of the causes of death, especially the latter."

De Bovis, in *La Semaine Medicale,* from an exhaustive inquiry into the same subject and from the study of the cancer statistics of the same subject, comes to these conclusions: That cancer of the uterus and of the female breast have declined; that cancer of the rectum appears to be stationary; that cancer of the mouth and upper digestive tract has greatly increased, and that the most marked element in the rise of cancer death-rate is that from visceral cancer.

Templeman's own conclusions are as follows:

1. That the death-rate from cancer as a whole during the twenty-five years under review has more than doubled, having increased from 7.27 to 16.92 per 1000 of the population over the age of twenty.
2. That this increase is greatest at ages over forty-five; is common to both sexes, but more marked in the male sex, though the actual mortality is higher among females.
3. That in females this is chiefly due to an increase in malignant affections of the abdominal viscera.

4. That uterine cancer and cancer of the breast in females have increased, though not in any marked degree.

5. That cancer of the rectum also shows a slight increase in both sexes.

6. That in males the highest mortality is from cancer of the abdominal viscera.

7. That in males cancer of the mouth and upper digestive tract has also greatly increased.

8. That therefore cancer of regions which may be described as "accessible" has increased, as well as that of parts which are not so accessible, and where the diagnosis is more difficult; but the increase in the latter is out of all proportion to that in the former class.

9. That during the same period there has been a great improvement both in clinical and pathological diagnosis, as well as in death certification, and consequently a considerable diminution in returns from such indefinite conditions as "old age" and "disease" of the various organs (without any specification of its nature).

10. That this must to a considerable extent have helped to swell the returns of death from "cancer."

* * *

THE QUESTION OF MIXED INFECTION IN TUBERCULOSIS.

Kerschensteiner (*Deutsche Archiv f. klin. Med.*, 1902, Vol. LXXV, p. 180 folg., p. 441 folg.) contributes an article of great extent and great value on the bacteriology of the secretions, especially purulent secretions, of the lungs and bronchi. The article is extremely full, and it will be impossible here to do more than give a brief *résumé* of the conclusions, which seem justified from a consideration of his work:

1. The flora of the sputum in tuberculosis differs from that of other pulmonary and bronchial infections only in the presence of the tubercle bacillus. Most frequently, whether in tuberculous or non-tuberculous sputum, streptococci are found. In tuberculosis staphylococci, tetragenes, diphtheria-like bacilli are frequently found, while in those not tuberculous tetragenes is frequently met with. Less often in tuberculosis are different kinds of micrococci, pneumococci, influenza bacilli, and colon-like bacilli met with. In non-tuberculous bronchial infections influenza bacilli and pneumococci are relatively more frequently met with, while diphtheria-like bacilli, and especially staphylococci, are relatively rarely met with.

2. After intratracheal injections of tubercle bacilli with micrococcus tetragenes in rabbits a very rapidly progressing destruction of tissue takes place, so that in four weeks' time a large cavity is formed.

3. By experiments upon man it can be shown that streptococci cultivated from tuberculous lungs, and moderately virulent for rabbits, possesses also a certain degree of pathogenicity for healthy human beings, as, by a subcutaneous injection, a local erysipelas can be produced.

SURGERY.

Under the Supervision of Hugh H. Young, M.D., Baltimore, Assisted by H. A. Fowler, M.D.

Iodized Catgut. Nicholas Senn, M.D., Ph.D., LL.D., Chicago.

Senn points out that the ideal material for ligatures and sutures is one that is removable by absorption after it has accomplished the mechanical purposes for which it was employed, and predicts that catgut will eventually render silk and metal obsolete as materials for buried sutures.

The methods of sterilization of catgut in the large clinics abroad differ markedly, and this fact proves that no one method has given entire satisfaction. Catgut which has undergone ideal sterilization should be (a) absolutely sterile, (b) mildly antiseptic, (c) strong, (d) durable, on the one hand, and (e) absorbable, on the other.

The most recent method of catgut preparation is the one devised by Claudius (*Deutsche Zeitsch. f. Chirg.*, Bd. LXIV, S. 489). This method is, briefly, as follows: Raw catgut, without any preliminary preparation, is wound on a glass roll, two strings tied together on each roll. This is then immersed in a 1 per cent. solution of iodine. The solution is made by dissolving one part of iodine and one part of potassic iodide in 100 parts of water. In making up the solution the potassic iodide is dissolved in a small quantity of water, to which is added the finely-powdered iodine, and the solution made up to 1 per cent. The solution and catgut should be kept in a wide-mouthed bottle, closed with a tight-fitting glass stopper. After eight days' immersion in this solution the catgut is ready for use. Before using the catgut is transferred to a 3 per cent. carbolic solution, or any indifferent sterile solution, for the purpose of washing off the iodine from the surface of the threads. The catgut can be cut as needed and the unused part returned to the iodine solution, in which it is kept permanently. In this way unnecessary waste is avoided.

Catgut prepared in this way is pitch-black, soft, pliable, and almost as strong as silk. The knots are firm, and not liable to slip. Removal by absorption takes place in from twelve to sixteen days according to the size of the threads. It does not irritate the tissues, as the free iodine is converted into potassic and sodic iodide by the salts of the tissue fluids.

For the past six years Senn has been using iodized catgut, prepared after Hofmeister's method, to the exclusion of any other kind, with uniformly satisfactory results. The method of Claudius has been used only a few weeks, but the results have been so far entirely satisfactory. This method of sterilization, on account of its simplicity, will recommend itself strongly to the country practitioner and military surgeon.

SURGERY OF TUBERCULAR CAVITIES OF THE APEX OF THE LUNG. DeForest Willard, M.D. *Journal of the American Medical Association,* September 20, 1902.

THE INOPERABLE NATURE OF THE PULMONARY TUBERCULAR LESION. Horace T. Whitacre, M.D. *Journal of the American Medical Association,* September 27, 1902.

The surgery of the lung has made great advances in the last few years. Conditions which were previously classed as hopeless have been brought within the domain of surgery, and the statistics have been most encouraging. Opening and draining of simple abscesses of the lung has given 90 per cent. of recoveries. Acute gangrene abscesses have yielded 61 per cent. of recoveries. Removal of echinococcus cysts is followed by 91 per cent. of cures. The treatment of bronchiectatic cavities is not so successful, involving, as it does, a mortality of 80 per cent. But along with these favorable results there has developed a technic and an experience which shows that the pleural cavity can be opened without any reference to adhesions, while the outlook is most encouraging.

These successes in this new branch of surgery have naturally given rise to the hope that tuberculous cavities of the lung might be treated surgically. The various operative procedures which have been proposed and carried out are discussed by Willard and Whitacre, and the views held by the leading surgeons who have been interested in this branch of surgery are given. The operations practiced for tuberculous cavities of the lungs are: (1) Compression of the lungs by the injection of nitrogen or other sterile gas into the pleural cavity; (2) Removal of ribs to permit collapse of chest wall and consequent compression of lungs; (3) Counter-irritation by cautery; (4) Aspiration and the injection of medicated solutions; (5) Incision and drainage of the cavity—pneumonotomy; (6) Excision of the diseased area—pneumonectomy. After reviewing the literature of these various operative procedures Willard concludes as follows:

1. With improvement in technic pneumonotomy will become a practical operation, even in cavities at the apex. The operation would be especially helpful in the early period of cavity formation, but it is exceedingly difficult at this stage to obtain the consent of the patient, since hygienic and dietetic methods of treatment often result in cure.

2. In advanced cases both tubercular and streptococcic infection are often present; the cavities are usually multiple, and the operation cannot cure. It may be employed, however, as a palliative to cough, hemoptysis, and sepsis.

3. In abscess of the lower lobes following pneumonia or pleurisy, whether tubercular or not, incision and drainage is to be recommended in any stage.

4. Pneumonectomy in our present stage of surgical and diagnostic skill is not advisable in tuberculosis.

5. With improved technic, tubercular foci will in the future be eradicated, as we now eradicate tuberculosis in joints and other tissues. An efficient and certain method of producing strong adhesions between the two layers of the pleura at the site of the disease is the most important step in this technic.

6. The careful and methodical application of auscultation, percussion, and the *x*-ray for the accurate locating of the diseased focus is also an important factor in securing a safe operation.

7. Pneumothorax is so serious a menace to life that in all operations on the lung an artificial respiration apparatus, like the Fell O'Dwyer or Matas instrument, should be at hand, together with a full jar of oxygen.

In order to determine the possibility of operative interference in pulmonary tuberculosis Whitacre has spent considerable time working from the pathological and clinical side. By a study of a series of 978 cases a table has been made out showing the most common distribution of the lesions. The table is as follows:

	Per cent.
One apex alone	0.93
Two apices alone	1
One upper lobe alone	2.30
Two upper lobes alone	3.60
One upper and one lower in same side	2.60
Two upper and one lower	8.50
One upper and two lower	1.20
One upper and opposite apex	1.30
One upper and lower and opposite apex	1
Two upper and two lower	74.90

Pneumonectomy.—The results in the excision of tuberculous foci in the lung depends on (1) completeness of the excision, and (2) absence of foci in other parts of the lung. The sum total of the cases operable from this point of view will be, according to the table above, about 2 per cent.: that is, those cases in which one or both apices alone are involved. This percentage is very small, and one must not forget that many of these cases of apex tuberculosis clear up under climatic, dietetic, and hygienic treatment. It has been recommended repeatedly that pneumonectomy should be done only when the cavities are circumscribed and isolated, but this condition occurs only rarely, according to Whitacre's experience, and diagnosis in such cases cannot be made absolutely. The excision of only a portion of the pulmonary lesion would be harmful. The only cases treated by this method are those of Tuffier, Doyen, and Lawson. Of these, only one was successful, and microscopic examination in this case revealed only an induration of the excised

lung tissue. According to Whitacre excision of tubercular foci would seem to be both impossible and irrational.

Pneumonotomy.—Drainage of tubercular cavities is practiced (1) to promote cicatrization, (2) to liberate pent-up pyogenic secretions, (3) to cause cavities left by a healed tuberculosis to cicatrize. Reviewing the pathology of tuberculous cavities, we have a cavity with a non-vascular, therefore non-regenerative, wall of tubercular tissue which has a constant tendency to extend peripherally, with a lining of dead tissue containing no germs of the disease—conditions quite different from those in an acute pyogenic abscess. Drainage alone can accomplish nothing, since tuberculous cavities usually contain caseous material, and such drainage can in no way affect the surrounding tuberculous tissue. There is no tendency to the formation of granulation tissue on the inside of such a cavity. In addition, the apex of the lung is encased in a firm, unyielding, bony box. Pleuritic adhesions will prevent the collapse of the walls. Incisions into such a cavity could not be expected to accomplish much. The point has been urged that operative treatment of tuberculous cavities becomes imperative when the secretions become retained and infected by pyogenic organisms. This brings up the subject of lung sepsis in pulmonary tuberculosis. The following statements are made regarding this question:

1. The vast majority of lung cavities are located in the apex or in the upper lobe of the lung, sites most favorable for drainage through a bronchus.

2. Of 978 cases studied, in not one has a cavity been the seat of infection and operation a possible element in the relief of symptoms.

3. The chemic nature of caseous material makes it an unfavorable, if not actually an impossible, culture medium for pyogenic germs.

4. In case such infection occurred patients with cavities would have bad breaths. This is not true.

5. Mixed infection in the area of active tubercular inflammation in lung tissue, not in the cavity, is the element which plays the part of importance in septic cases.

6. In patients with cavities the temperature curves are neither high nor septic; septic temperatures are not found.

7. Persistence of a sinus is the usual result after drainage.

Operative interference upon cavities left after the tuberculosis has been healed has been proposed, but one has to consider—(1) Such cavities usually give patients very little annoyance; (2) It is impossible in any given case to say just when the tuberculous process has become healed; (3) Operative interference in a cavity that has progressed just short of complete healing has resulted in

general dissemination and death; and (4) the great difficulty in selecting those cases favorable for operation by physical examination.

The *x*-ray in such cases has not proved of great diagnostic value. Whitacre, then, considers tubercular lesions of the lung inoperable from the viewpoint of excision and drainage of cavities.

The Nitrogen-compression Method.—This method has been employed by several observers, with promising results. The method is on trial, and seems to be a rational procedure. The good results locally are brought about by (1) Limitation of areas of disease already existing by fibrosis, occlusion of avenues of dissemination of virus and compression of cavities; (2) Rest to the organs as a whole; (3) Emptying the secretion; (4) Prevention or diminution of absorption of toxic products; (5) Prevention of secondary infection; and (6) the diminished tendency to hemorrhage. The application of the method presupposes a pleural cavity. In the great majority of cases, however, pleural adhesions of various extent are present. In a certain number of cases the pleural cavity is completely obliterated. Approximately 90 per cent. of cases coming to autopsy have presented adhesions so extensive that the complete collapse of the lung by the nitrogen method would have been impossible. Autopsy findings also demonstrate that pleural adhesions are not co-extensive with the pulmonary lesion, and we cannot rely on the history or on physical examination to determine the presence or absence of adhesions.

Certain selected cases of pulmonary tuberculosis may be treated rationally by nitrogen compression, but the per cent. is very small indeed.

Incipient and apex cases do not require such treatment. Pleuritic adhesions may entirely obliterate the pleural cavity, while irregularly-distributed adhesions may render collapse imperfect and inefficient.

Thoracoplasty.—This method proposes to remove the greater part of a large number of ribs over the diseased area of the lung, thus allowing the chest wall to fall in and the cavities to cicatrize. The operation was carried out on a patient twenty-one years old who was in good health two and one-half years after, but tubercle bacilli were still present in the sputum, so the case cannot be considered cured. The operation depends upon the same sound principles as nitrogen compression. It is a much severer operation, and when the latter is available it would seem irrational to undertake the more extensive operation.

The following arguments are advanced against such an operation: (1) The severity of the procedure; (2) It will always be done in patients much reduced in vitality, and hence the mortality will be high; (3) Complete rest of the lung is not secured, as shown by animal experimentation; (4) Climatic treatment renders a fair

per cent. of cures in the class of cases that would be considered suitable for this method.

The conclusions reached are thus briefly summarized:

1. The excision of the pulmonary lesion is, in the vast majority of cases, both impossible and irrational.

2. The incision and drainage of tuberculous cavities in the lung does not seem to be a justifiable operation.

3. The nitrogen-compression method of Murphy is a rational procedure in a limited number of selected cases, its application is safe, the effect on the tubercular lung seems favorable, and the reported results are encouraging.

4. Thoracoplasty, while based on the same sound principles that give value to the nitrogen method, is an extensive operative procedure involving great risk to life, and furnishes slight promise of improving the percentage of cures obtained by climatic treatment.

* * *

A Research into the Means of Controlling the Blood Pressure. George Crile, M.D., Cleveland. *Boston Medical and Surgical Journal,* March 5, 1903.

In an address before the Boston Medical Library meeting, January 19, 1903, Crile has given in a condensed form the results of his numerous experiments in determining the means of controlling blood pressure. He points out the clinical applications of his findings, which are particularly important from the standpoint of the surgeon. Our ideas of the treatment of shock and collapse have been modified considerably in the last two or three years, and this gradual change, based upon careful and painstaking experimentation, is due in no small measure to the writings and teaching of Crile and Cushing.

The conditions of shock and collapse serve to illustrate the relative value of the various means of controlling blood pressure.

Shock.—In shock the essential phenomenon is a diminution of the blood-pressure. Exhaustion rather than structural changes is assumed to be the cause of this fall, as no demonstrable lesions are found in the fatal cases. This exhaustion can be explained as being due to the fatigue of (a) cardiac muscle, (b) cardiac centers, (c) blood-vessels, or (d) vaso-motor center.

By a series of experiments the author has shown conclusively that it is exhaustion of the vaso-motor center which produces shock; that shock is essentially an exhaustion or breaking down of the vaso-motor center. This point having been demonstrated, an inquiry was then made into the value of the vaso-motor stimulants, such as strychnine, in the treatment of shock.

In a series of forty-eight cases it was found that strychnine in therapeutic doses had no effect on the blood-pressure. In another series, in which the dose was increased to the convulsion stage, a remarkable rise followed. This rise was not due to muscular con-

tractions in the convulsions, as the same rise was noted when curare was previously used. The rise was not due to the stimulant action on the heart, as an equal rise in blood-pressure occurred in animals in which both vagi and accelerantes were severed. It was therefore a vaso-motor stimulant. Each succeeding physiologic dose caused less effect, and after two to four doses were given no appreciable effect was obtained. The blood-pressure had meanwhile fallen and reached the level seen in profound shock. It was not possible in this stage to distinguish between these animals and animals in profound traumatic shock. It was, then, shock produced by strychnine. The effect on the vaso-motor centers seemed to be the same whether the stimulation was external and mechanical, as in injuries or operations, or internal, as from strychnine. In cases of shock in which strychnine was given the effect was proportional to the degree of shock—the greater the shock the less marked the effect. It was found that the best and most certain way of producing shock for experimental purposes was by administering physiologic doses of strychnine. The conclusion in regard to the use of strychnine in traumatic shock would seem to be that it is as reasonable to treat strychnine shock by administering traumatism as traumatism shock by strychnine. This conclusion would seem to apply, also, to other stimulants of the vaso-motor center.

In regard to cardiac stimulants, it has been shown that an increase in the rate and force of the heart-beats has only a limited effect on blood-pressure. From the standpoint of physics and physiology it would seem that the peripheral resistance fixes the gauge for the height of the blood-pressure, while the heart supplies the force necessary for circulating the blood. Experiments showed only a slight influence of cardiac stimulants, such as digitalis, upon the blood-pressure. Other drugs, such as alcohol, nitroglycerine, and amyl nitrite, usually classed as stimulants, were found to cause a fall in blood-pressure. No justification could be found for classifying these drugs as stimulants. With all, the final breakdown of the circulation was more sudden than in the control animals. If these results be correct, the use of stimulants acting upon the vaso-motor, cardiac, and other centers of the medulla are, on the whole, either inert or harmful.

The value of normal saline solution in controlling blood-pressure was found to have a limited range of usefulness. When introduced intravenously or subcutaneously it is a purely mechanical aid to the circulation, and is eliminated rapidly from the blood-vessels. In cases of true shock (exhaustion of the vaso-motor center without loss of blood) the rise in blood-pressure following the use of saline solution is not sustained, even when its use is prolonged, on account of the absence of peripheral resistance. The accumulation of the solution in the stomach, intestines, and peritoneal cavity may so restrict the movements of the diaphragm as to result in death from respiratory failure. In order to raise and sustain the blood-pressure when the vaso-motor center is exhausted (shock) it is neces-

sary to create a peripheral resistance either by a drug acting directly on the blood-vessels, such as adrenaline, or by mechanical means. Adrenaline was found to cause a rise in pressure when the vaso-motor center was exhausted, cocainized, or destroyed, also when both vagi and accelerantes were severed and the animal was under the influence of curare. Adrenaline is best given by a continuous intravenous infusion in salt solution in strengths varying from 1-50,000 to 1-100,000. In the only clinical application made the patient, who was dying, was kept alive for nine hours by the use of adrenaline and external pressure.

The best means of applying external pressure is by means of a pneumatic rubber suit, which can be inflated by means of a bicycle pump. Pressure applied uniformly in this manner will force the blood accumulated in the larger veins toward the right heart and prevent to a certain degree the continuance or development of cerebral anemia.

Collapse.—The term "collapse" is applied to those cases which present a more sudden fall of blood-pressure, due to hemorrhage, injuries of the vaso-motor center, or cardiac failure. In this condition there is a suspension of functional activity rather than an exhaustion of centers. In collapse, mechanic, thermic, electric, or therapeutic stimulants may be beneficial. Saline infusion, for instance, might be of great assistance.

In cases in which the vaso-motor center, the cardiac centers, the heart itself, and the respirations have all ceased to show functional activity—that is, when the animal was apparently dead—observations were made on the use of various methods, such as electricity, needling the heart, massaging the heart, injection of strychnine and ammonia or other drugs, into the chambers of the heart and into the heart muscles, artificial respiration, salt solution intravenously, and rapid changing of posture. These were used singly and in various combinations, but in no instance was it possible to resuscitate the animal after more than fifty-eight seconds had elapsed after the last heart-beat. The most favorable results were obtained by combinations of rhythmic pressure upon the thorax over the heart, artificial respiration, and intravenous saline infusions.

To test the use of adrenaline, animals were killed by asphyxia, artificial respiration, combined with rhythmic pressure on the thorax over the heart, performed, and at the same time adrenaline administered in saline solution into the jugular vein. By this means adrenaline might, through the feeble circulation, be brought into contact with the walls of the blood-vessels, raise the blood-pressure, re-establish the coronary circulation, and, in turn, re-establish the heart action.

By this method animals apparently dead up to fifteen minutes were restored to conscious life. The circulation and respiration in dogs electrocuted by a shock of 2300 volts of an alternating current were re-established.

REVIEW IN HYGIENE.

Under the Supervision of Robert Reuling, M.D., Baltimore.

Snake Venom in Relation to Hemolysis, and Toxicity. Simon Flexner and Hideyo Noguchi. *Journal of Experimental Medicine,* Vol. VI, No. 3.

As this article is of such special interest at the present time, when all those interested in the science of medicine are looking forward to the important results which are being accomplished in the field of animal immunity; it is for this reason that the authors' work will be reviewed at some length.

In their experiments with snake venom the dried substance only was used. For injection this was dissolved in normal saline solution in strengths ranging from 0.01 per cent. to 70 per cent. By using washed red-blood cells in solution the process of agglutination was more clearly demonstrated as the succession of lytic phenomena is eliminated. A 5 per cent. solution of corpuscles in normal salt solution was employed. The authors could show that complete agglutination has no effect upon subsequent solution (lysis) of the corpuscles. Distinct differences in susceptibility of agglutination were observed. Of the mammalian blood employed the red corpuscles of the rabbit are highly susceptible, while those of the guinea-pig, dog, sheep, swine, and ox were less responsive in about the order given. The venoms used show also that with some the range of lytic activity is greater than that of the agglutination property. Very weak solutions of venom which no longer cause agglutination may still produce solution of corpuscles. The venoms differ in hemolytic power as follows: Cobra, most active; water moccasin, copperhead, rattlesnake, in less degree in order named. Very strong solution of venom (5 per cent.) are needed to cause hemolysis of corpuscles of the ox, but such great strengths are without action on the rabbit's corpuscles, although they are still capable of producing rapid solution on the dog or sheep's corpuscles.

Temperatures of 75° to 80° for thirty minutes have no effect upon the hemolytic action of any kind of venom. After heating to 100° C. for fifteen minutes the dissolving power of cobra, moccasin, and copperhead venom in solution is slightly reduced. In no instance were washed-blood corpuscles dissolved by venom. Agglutination occurs as described, but if the separated serum is restored to the corpuscles and treated with venom, lysis takes place.

The following experiment seems of special interest, as the authors seemed to prove the presence of neutralizing substances for venom in the tissues of the body. The brain, liver, spleen, kidney,

voluntary muscle, adrenal gland, and blood were tested. The tissues were first washed in tepid, sterile, normal salt solution, and a weighed quantity (2 grammes) taken. This was triturated in a sterile mortar and mixed in test tubes with three times the minimal lethal dose of venom. The mixture was placed in a thermostat for one hour. It was then centrifugalized, and the supernatant fluid was injected into the guinea-pigs. This solution contained at least twice the minimal lethal dose. The results of these experiments were as follows:

Control	Dead in 45 minutes.
Brain	19 hours.
Blood	3 hours 50 minutes.
Adrenals	2 hours 35 minutes.
Spleen	2 hours 10 minutes.
Liver	1 hour 30 minutes.
Kidney	1 hour 55 minutes.
Muscles	1 hour 30 minutes.

RELATION OF NEUROTOXIC TO HEMOLYTIC PRINCIPLE.

That these two principles are distinct is rendered probable by the effects of washed red corpuscles and of brain tissue, respectively, on the toxicity of venom. Blood cells remove little, or perhaps none, of the toxic constituent that brain cells do away with *in toto*. The proof of difference can, however, be brought in another way. Four M. L. D. of venom were treated with an excess of red corpuscles, and the supernatant fluid was injected into a guinea-pig. Death ensued in thirty minutes. The same quantity of venom having been treated with 4 grammes of brain emulsion, the supernatant fluid injected into a guinea-pig caused death in forty-eight hours. The supernatant fluid from the brain emulsion was strongly agglutinating and hemolytic for defibrinated blood, while that from the washed corpuscles had lost all these properties. The supernatant fluid from the brain emulsion, when treated with an excess of washed corpuscles, recentrifugalized, and the fluid then injected is non-toxic for guinea-pigs.

These experiments show (1) that the neurotoxic and the hemolytic principles are physiologically distinct; (2) that while the chief toxic constituent unites with the nerve cells in multiple M. L. D. from which the neurotoxic principle has been removed, a quantity of hemolysin may be contained sufficient to bring about fatal intoxication.

EFFECTS OF VENOM UPON BACTERICIDAL PROPERTIES OF BLOOD SERUM.

The bactericidal effects of normal sera was first established. Rabbit's serum is highly destructive for B. typhi and B. authracis, and least destructive for B. coli. Dog's serum is highly destructive for B. typhi.

SERUM VENOMIZED IN VIVO.

Cobra venom was most active. Blood from rabbits which had received 10 milligrammes taken fifty-seven minutes after the injection showed great loss of bactericidal properties. Those more interested in the practical side of this question, namely, the therapeutic possibilities of antivenni, will be interested in the following remarks of the authors which conclude their article:

EFFECTS OF ANTIVENIN ON HEMOLYSIS AND BACTERIOLYSIS.

Calmette's antivenin was used. This antivenin was proven to be non-hemolytic for rabbit's corpuscles and to improve slightly the nutritive value of fresh rabbit's serum.

Erythrolysis by cobra venom on rabbit's corpuscles is prevented if neutralization by antivenin is effected. Thus, 2 milligrammes of venom plus 1 cubic centimeter of antivenin is still lytic, although action is retarded; 1.5 milligrammes of venom plus 1 cubic centimeter of antivenin caused slight hemolysis after twenty-four hours, while 1 milligramme plus 1 cubic centimeter was without action.

In the case of rattlesnake venom, 1 cubic centimeter of antivenin neutralized 3 milligrammes of poison.

Leucolyosis was affected in approximately the same degree as in the case of erythrolysis.

The effect on bacteriolysis is equally marked. When cobra or rattlesnake venom is treated with a neutralizing quantity of antivenin, and fresh serum is added, the resulting fluid behaves in a manner similar to that of the control mixture of normal fresh serum and antivenin.

Antivenin, therefore, neutralizes venom and removes both the hemolytic and the antibacteriolytic actions.

* * *

Proceedings of the Thirtieth Annual Meeting of the American Public Health Association. New Orleans, December 8-12, 1902.

Reference was made to researches with regard to the communicability of human tuberculosis to animals, the experimental work of Ravenel, Mohler, De Jong, Deleprine, Orth, Senstrohm, Fibriger, Jansen, Nocard, Behring, and a number of other investigators, and these investigations were sufficiently numerous and harmonious in the results to establish the following conclusions:

1. The bacillus tuberculosis found in human tuberculosis differed greatly in its pathogenic powers as obtained from different cases.

2. Two types of tubercle bacillus might be obtained from man, namely, one which was somewhat difficult to cultivate, which grew slowly, and the bacilli which are short, stubby and free from bead-

ing—the so-called bovine type; and the second, which was quite easily cultivated, grew rapidly, was longer, thinner, and inclined to show beading and curved forms—the so-called human type.

3. Virulent culture might be obtained from both of these, which, when inoculated according to the methods used by Koch and upon the species of animals specified by him, produced progressive and fatal tuberculosis.

4. The contention that human tuberculosis could not be transmitted to asses, sheep, goats, and especially to cattle, had been completely disproved.

5. Koch's failure to produce tuberculosis in the animals named with bacilli from human sources was probably due to the use of bacilli of low pathogenic powers.

6. Bovine bacilli introduced into the human tissues by accidental inoculation, if left, multiplied and produced disease at the point of inoculation, and even recovered after a considerable time with their vitality and virulence unimpaired.

7. Various statistical studies indicated that a considerable proportion of cases of human tuberculosis, and particularly with children, originated from the ingestion of the bacilli with contaminated food.

REPORT OF THE COMMITTEE ON DISINFECTION AND DISINFECTANTS.

As to gaseous or room disinfection, formaldehyde still held the first place in efficiency. There had been a return to a certain extent to the use of sulphurous acid, owing to its stronger action upon insect pests, but all the new experiments showed clearly that it was a far weaker disinfectant than formaldehyde, and could not be depended upon except in a few limited cases. Gaseous disinfection was the great panacea for preventing the spread of contagion, but the committee was strongly of the opinion that when properly carried out it was an important and effective aid in public health work, and could continue to be, and that formaldehyde was by far the best agent to use in carrying it out. In using formaldehyde two things should be provided for—first, a sufficiency of water in the air of the space to be disinfected, and, secondly, a very rapid disengagement of the gas. Most forms of apparatus failed in one or the other of those points. The disinfection of the future must be simple, short, and sharp.

DANGERS TO THE PUBLIC HEALTH FROM ILLUMINATING AND FUEL GAS.

It was shown by these investigations that the common condition of gas pipes and fixtures was very poor, that moderate small leaks are very numerous, and that a moderate increase of pressure in the fixtures above the normal gas pressure produced leakage in 89 per cent. of all the houses examined. It was also shown that the number of fatalities from illuminating gas was not only large, but was

increasing from year to year. In order to ascertain to what extent the medical profession of Boston had recognized cases of acute and chronic poisoning by illuminating gas, letters were sent, and 460 physicians replied. Two hundred and forty-six of them reported no experience; the other 214 reported 1025 cases of acute poisoning. Three hundred and seventy-four of these resulted fatally; 288 were found dead, and 86 lived from one hour to twelve months; 623 made complete recovery in periods varying from a few hours to three years; 28 made partial recovery while under observation of three weeks to twenty-one months.

* * *

Society of American Bacteriologists: Fourth Annual Meeting, Washington, December 30 and 31, 1902.

On the Reaction of Certain Water Bacteria with Dysentery Immune Serum. Dr. D. H. Bergey, University of Pennsylvania.

The author isolated suspicious organisms from polluted waters, and, on the assumption that the Shiga bacillus may be present, subjected the bacilli to the agglutination test, using serum from a horse immunized to the bacillus dysenteriae. Of twenty-five cultures, from eight to ten gave a positive reaction, but further investigation of the cultures proved them to be entirely distinct from the Shiga bacillus. They were more like the colon bacillus, and evidently belonged to that group. Yet even dilutions of 1 to 400 and 1 to 1600 proved positive. These experiments show that the agglutination test alone is not sufficient to distinguish the bacterium coli from the bacillus dysenteriae. He believes the organisms which gave the reaction are pseudo-dysentery bacilli.

A Preliminary Chemical Study of Various Tubercle Bacilli. Drs. A. E. de Schweinitz and M. Dorset.

De Schweinitz described the composition of Dorset's egg-medium for the cultivation of tubercle bacilli. As tubercle bacilli become attenuated their chemical composition changes, the human bacillus gaining in extractives. Bovine and human bacilli are more related than virulent human and attenuated human bacilli. He reported several cases of the transmission of bovine tuberculosis to infants through milk. But there were no intestinal lesions. Dr. Welch remarked that the fact that the tubercle bacillus may become attenuated has an important bearing on this controversy, as Dr. Trudeau first pointed out. Dr. Bergey believes that additional light may be thrown upon this question by immunizing cattle with both bovine and human bacilli, and then testing with tuberculin obtained from the respective organisms.

PATHOLOGY AND BACTERIOLOGY.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

Notes on Systemic Staphylococcus Infection. E. Libman. *New York Pathological Society Medical Record,* March 21, 1903.

In this paper, read before the New York Pathological Society, the author wished to prove that the staphylococcus aureus could be cultivated from the blood during life, and all skin contamination could be excluded. The staphylococcus albus does not occur in the blood except as an ante-mortem invader. After a short description of the technique, Dr. Libman gave a brief report of twenty-three cases in which he had found the staphylococcus aureus in the blood. In every case the same organism had been isolated from the primary focus; the same organism had been found in the metastatic foci and often in the urine, and in the organs of the cases coming to autopsy. In 325 cases he had never obtained a colony of staphylococcus aureus, so that when he did find this organism in the blood he concluded it was a systemic infection. He called attention to metastatic skin abscesses occurring in osteomyelitis. They occurred particularly in the scalp, but could be found all over the body. They were small, and seemed to have their origin in the sweat glands. They always showed the staphylococcus aureus pure. The reports on blood cultures were usually made within twenty-four hours; in a very few cases three to four days elapsed before a definite diagnosis was established. Of the twenty-three cases described, five had recovered. The number of cocci found in the blood was not necessarily of diagnostic import. The amounts of blood used varied from 1 to 15 cm.

* * *

The Presence of the Shiga Variety of Dysentery Bacilli in an Extensive Epidemic of Dysentery, with Notes upon the Serum Reactions Obtained. Park and Carey. *The Journal of Medical Research,* March, 1903.

From a fatal case of dysentery, occurring in a severe and extensive epidemic in a small town situated just north of New York city (Tuckahoe), a bacillus was obtained which in all but one of many cultural tests seemed identical with Shiga's Japan and Flexner's New Haven culture, the only point of difference being that the Tuckahoe culture produced a trace of indol in peptone solution. The specific agglutinins developed in animals through injections of the group of "dysentery" bacilli, which produces considerable indol and develops acid from mannite, did not agglutinate the Tuckahoe, Shiga, or New Haven cultures. All bacilli so far obtained in America, outside of the New Haven and Tuckahoe cultures, seem to belong to this class.

The serum reactions of the blood taken from a number of convalescent cases with the Baltimore culture were on the average much

more marked than those obtained by the authors from the blood of acute cases of other intestinal diseases, and indicate that this variety of bacilli, as well as the Tuckahoe variety, was present and active in many of the Tuckahoe dysentery cases. Three months later the serum reaction had largely disappeared in the cases tested, and was about alike for both varieties of bacilli.

The conclusions drawn from these observations are that at least two distinct varieties of bacilli have been found in the intestines of those suffering from acute dysentery and colitis, which are probably exciting factors in the disease. These two varieties, though resembling each other greatly in most cultural characteristics, differ in some (indol formation and mannite fermentation), and also in their agglutination reaction. Though Martini and Lentz are right, therefore, in their statement that the Shiga type differs from Flexner's Manila-Baltimore type in cultural and agglutination reaction, yet they appear to be wholly wrong in concluding that one type of organism is a factor in dysentery and the other not. The use of more accurate agglutination tests in connection with additional culture media has brought to light the fact that in different epidemics the bacilli believed to have excited the disease vary so greatly from the original culture of Shiga that at present we can hardly decide whether a single group is broad enough to comprise all the varieties. It is perhaps more than a coincidence that in most of the epidemics of characteristic dysentery the bacilli found have not fermented mannite. Even if the serum treatment proves of great value, we can hardly hope that the bactericidal properties obtained through the injection of animals with one type of culture will be useful in persons suffering from the other type.

* * *

Bacteriologic Examination of the Blood During Life in Scarlet Fever, with Special Reference to Streptococcemia. Ludvig Hektoen. *Journal of the American Medical Association*, March 14, 1903.

In this article are presented the results of a bacteriologic examination of the blood during life of cases of scarlet fever, with especial reference to general streptococcus infection in this disease.

The frequency of streptococci in fatal scarlatina is not definitely established. All earlier investigators appear to have regarded the streptococcus infection as entirely secondary in its character, the principal point of entrance being the throat. Baginsky found streptococci in the heart's blood and internal organs in every one of eighty-two fatal cases of scarlet fever. The streptococci could not be differentiated from ordinary streptococcus pyogenes. He claimed that the streptococcus plays a specific *rôle* in scarlet fever. Slawyk, on the other hand, regards the streptococcus invasion as secondary because of its absence in a good number of cases even after death (present thirty-nine times in ninety-eight fatal cases), because in 82 per cent. of the cases in which it was found there existed grave ulcerative complications through which invasion could

readily take place, and because streptococci were absent in those cases that died in the first three days of the disease. ' In measles and diphtheria he found streptococci in the blood in 22 and 20 per cent. of the fatal cases, respectively.

There seems to be but little doubt as to the frequency of streptococcus infection in scarlet fever, be it primary or secondary, and even though scarlet fever is not a streptococcus disease, the disease without streptococcus infection would lose half its terrors.

The object of the present series of investigations is to learn more about the presence or absence of streptococci in the blood of non-fatal cases of scarlatina, mild as well as severe, complicated as well as uncomplicated.

The blood for the cultures is secured by puncture of some vein at the elbow, after careful disinfection of the skin.

The results are given in detail in tabulated form, and show that out of a total of 100 cases examined, streptococci were found in twelve cases, twice on the second, third, and fifth days of the disease, and one each on the first, fourth, sixth, and seventh days.

As to the character of the cases, in forty-five mild cases streptococci were found in four cases; in forty moderately severe cases streptococci were found in five cases; in eleven severe cases streptococci were found in three cases; in four fatal cases streptococci were not found during life. This summary shows that the relatively largest number of streptococcal growths were obtained from the more severe cases. In two of the fatal cases pure cultures of staphylococci were obtained from the blood during life.

As to the relations of streptococci to scarlet fever, the work of Hektoen leads him rather to favor the view that the streptococcus infection is secondary because absent in the large majority of cases, even severe ones, and because, though absent in the earlier part of the disease, it may appear in the later stages of some cases. Streptococci seem to occupy the same relation to diphtheria and to smallpox as they do to scarlet fever if we judge from the frequency of streptococcus infections in these diseases.

Dahmer obtained streptococci from the heart's blood and spleen in 47 per cent. of thirty-six fatal cases of diphtheria, and from the trachea in 100 per cent. In Flexner's statistics of terminal infections in chronic heart and kidney diseases the streptococcus was the most prominent organism present. Ewings found a streptococcus in the heart's blood of all of twenty-nine cases of smallpox.

In consideration of these facts the author states that the best hypothesis of the etiology of scarlet fever is the one that in scarlet fever two infections generally coexist in the oral-pharyngeal cavity. The cause of the specific *primary* infection is unknown. The second infection is the streptococcus infection, but this infection does not seem to be generalized when we except the severe fatal cases.

Whether the virus of scarlet fever directly increases the virulence of existing streptococci, stimulating them to the production of toxins peculiar to scarlet fever, and whether it favors general streptococcus infection by decreasing local or general resistance to strep-

tococci, whatever the factors concerned may be, are questions on which further light is greatly needed.

* * *

INTRAVASCULAR ANTISEPSIS. Fortescue-Brickdale. *Lancet,* January 10, 1903.

The objects of the writer in conducting his series of experiments were twofold—firstly, to test the toxicity of various antiseptics when injected into the veins of rabbits, and secondly, to discover if any of them exerted an influence on the course of an artificially-produced septicemia.

For the first series of experiments the following substances were chosen: (1) Perchloride of mercury; (2) Oxycyanide of mercury; (3) Formic aldehyde; (4) Chinosol; (5) A mixture of formic aldehyde and chinosol; (6) Protargol; (7) Taurocholate of soda. Definite quantities of each were injected into the marginal vein of the rabbit's ear. A number of injections were made on successive days, so that a tolerance of the drugs might possibly be established.

The conclusions drawn from this series of experiments are:

1. That perchloride of mercury, oxycyanide of mercury, and protargol cannot be injected intravenously into rabbits in sufficient strength to produce an antiseptic effect lasting over several days.

2. That a mixture of chinosol and formic aldehyde is too toxic, even in minute doses, to be of use for practical purposes.

3. That chinosol or formic aldehyde can be injected intravenously so as to produce a solution which would have an inhibitory effect in vitro.

4. That sodium taurocholate can be injected in small doses, but that toxic effects manifest themselves after a few days.

In the second series of experiments the effects of the injection of th above substances on infected animals were investigated.

In one series a pure culture of anthrax was used for inoculations, in a second the pneumococcus. After each inoculation definite strengths of the above-mentioned drugs were injected intravenously and repeated every twenty-four hours. The oxycyanide, the chinosol, and formic aldehyde rabbits were found dead on the fifth day; the rest, including the control animal, survived. Post-mortem examinations showed that all the animals died of anthrax septicemia. By increasing the dose of anthrax bouillon the protargol and taurocholate rabbits died—the former before the control, the latter a few hours later. In no case was there any inhibitory effect on account of the antiseptic.

With the pneumococcus series the control outlived all the other rabbits. From these experiments the author concludes:

1. That rabbits injected daily with non-toxic doses of oxycyanide of mercury, formic aldehyde, chinosol, and protargol are not thereby protected from the usual effects of a previous inoculation of virulent anthrax.

2. That chinosol and formic aldehyde in large doses so depress rabbits infected with pneumococcus that they die sooner than an untreated animal.

It may be said that at present there is no experimental evidence which would warrant the assumption that the course of a septicemia in animals can be influenced favorably by the intravenous injection of antiseptic substances, and that the only result to be obtained by pressing such treatment beyond the maximum non-toxic dose is to hasten the death of the animal.

In view of the results described in this paper and those obtained by former investigators it seems useless to continue trying to apply clinically a method which, while by no means free from special dangers, is at present unsupported by any experimental evidence either as to its present advantages or future prospects.

* * *

The Etiology of Acne Vulgaris. Caspar Gilchrist. *Journal of Cutaneous Diseases,* March, 1903.

In a previous communication (May, 1899) Gilchrist called attention to the presence of a specific bacillus, the bacillus acnes, in a large number of cases of acne investigated by him. The bacillus was described as a short, thick organism in the smears, but in cultures it became longer, thicker, and branched. No capsule could be demonstrated. Successful inoculations in mice and guinea-pigs were carried out. The animals died in about a week. Pure cultures of a bacillus were obtained from the different organs.

It was remarked that the results obtained justified the conclusion that the pustules and nodules of acne vulgaris were due not to the invasion of ordinary pus organisms, but rather to the specific bacillus named above.

The present paper is a continuation of these researches. Further study in the isolation of the specific organism merely confirms the results obtained in the previous investigations.

The histo-pathology of the disease is described in more detail. In order to determine the agglutinating action of the organism, seven specimens were obtained from six cases of this disease—dilutions of 1 to 10, 1 to 50, 1 to 100. The specimens were observed at various times off and on for twenty hours. After fifteen hours definite clumping or agglutination was noticed in all the specimens in all the dilutions, and after twenty hours the clumping was still more marked. Specimens of blood serum from five normal patients were used as a control. In the higher dilutions (1 to 100) agglutination was entirely absent.

From these results the author concludes that the bacillus acnes is the primary cause of acne vulgaris, and suggests the probability that the anemia, constipation, headache, etc., are the result of continued absorption of toxins from the large number of bacilli present rather than the predisposing causes of acne vulgaris.

Book Reviews.

Therapeutics of Infancy and Childhood. By A. Jacobi, M.D., C.L.D. Third edition. Philadelphia: J. B. Lippincott Company. 1903.

"In this revision I have made many additions to my book, but no actual changes in its general character. The profession seems to have approved of my attempt at founding therapeutics on etiology. Their connection I have tried to make still closer, and the reader will find that in a concise manner much that belongs to pathological anatomy, etiology, and diagnosis is utilized in the interest of treatment." This statement we find in the preface to the third edition, and a careful study of the book shows that the aim of the author has been maintained throughout. We know of but one other work on a kindred subject in which the individuality of the author stands out so prominently—Henock's "Kinderkrankheiten." Both authors speak from extensive experience, and for the greater part discuss what they have seen and done rather than heard and read.

Jacobi is an advocate of the use of cereals in dilution of milk, and a rather liberal dilution at that. He urges the necessity both in health and disease of the liberal use of water to an infant's diet, and "not to force a thirsty baby to eat food."

The substitution of cow's milk or of sterilized cow's milk for woman's milk as the *exclusive infant food* he regards as a mistake. He prefers to sweeten the food with *cane sugar,* not *milk sugar.*

The modern laboratory methods of infant-feeding, while all right scientifically and theoretically, Jacobi strongly condemns in its practical aspect. He prefers mothers to "bar-maids" in the handling of the infant's diet.

The therapeutics of all the diseases of infancy and childhood are discussed with the thoroughness characteristic of the author. We know of no work in which the subject is treated with more judgment. There is not a chapter which will not bear close study and will repay the time devoted to it.

Atlas and Epitome of Human Histology and Microscopic Anatomy. By Privatdocent Dr. J. Sobotta of Wurzburg. Edited, with additions, by G. Carl Huber, M.D., Junior Professor of Anatomy and Histology, and Director of the Histological Laboratory, University of Michigan, Ann Arbor. With 214 colored figures on 80 plates, 68 text illustrations, and 248 pages of text. Cloth, $4.50 net. Philadelphia and London: W. B. Saunders & Co. 1903.

This work is most liberally illustrated with, for the greater part, accurate drawings. There are eighty lithographic plates and sixty-eight figures reproduced with the aid of photo-mechanical methods. The greater majority of the illustrations were made from sections prepared from human tissues, obtained from individuals who had been executed, and were taken very soon after death. The text is rather brief, unimportant details being omitted and theories not discussed; still full enough to give a rather clear insight into the subject.

We consider it a good addition to this well-known series of hand atlases.

MARYLAND MEDICAL JOURNAL.

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BALTIMORE, MAY, 1903

HOUSE-TO-HOUSE DISTRIBUTION OF POISONS.

A BILL recently introduced in the New York assembly provides a penalty for the distribution of free samples of any drug, medicine, or chemical compound in such a manner that children may become possessed of them. This is timely legislation. The free-sample plan of advertising nostrums is very much in evidence just now in Maryland, and the distribution is effected in the cheapest and most dangerous manner by depositing them in doorways. No fatalities have been charged in Maryland to this abuse, but it does not follow that none have occurred. The deaths which follow directly and promptly upon such wholesale scattering of poisons must be but an insignificant fraction of the total damage.

Among the nostrums advertised in Maryland by house-to-house distribution the most dangerous probably are headache remedies. Acetanilid is the active agent in practically all of them. This drug is exceedingly cheap, the three doses for ten cents costing less than one cent. Ordinary headaches are usually relieved by one or two doses. Two doses suffice to produce also noticeable symptoms of poisoning in some adults, but these symptoms are not such as to attract the attention of the consumer or of a lay observer. A young lady with a headache or a menstrual pain may be so far relieved by ten grains of acetanilid as to feel fit for an evening, but the drug will rob her of her beauty. Pallor and blue nails may mystify her, perhaps keep her at home, but she will not, in the absence of pain, attribute her poor appearance to the headache tablets.

Many persons carry a few doses of acetanilid about at all times, and take them for trifling and perhaps evanescent pains. The drug has perhaps no such seductive influence as is possessed by the narcotics generally, but it may enslave, and its injurious effects in such cases are quite marked. Stengel and White report in *University of Pennsylvania Medical Bulletin* a case of chronic acetanilid poisoning in the person of a young woman of twenty-five, who had become habituated to the use of acetanilid for the relief of dental neuralgia. Her habit was of four or five years' duration, and was so secretly practiced that her brother, a well-educated physician, did not suspect her of any drug addiction. Her appearance is described as startling, and the suspicion of intoxication by a hemolytic poison arose very promptly. After three months' careful observation in hospital her supply of acetanilid was caught in transit, and she confessed. The features of the case were insomnia,

extreme cyanosis, gastric disturbances, emaciation, an enlarged heart, acting very feebly and irregularly, and profound blood changes. She recovered rapidly after the supply of acetanilid was cut off.

A child was recently killed in a New York town by some free samples of sugar-coated pills. The symptoms suggested belladonna poisoning. Strychnia is another common ingredient in many of the widely-advertised nostrums. Belladonna and strychnia are energetic poisons, whose effects include physical discomfort and are altogether such as to point to their cause. Acetanilid, on the other hand, produces no distress, and its effects are likely to be overlooked or misinterpreted. Because it is very extensively employed, and because its effects do not excite suspicion on the part of the consumer, nor demand medical intervention, acetanilid is perhaps the most dangerous drug contained in present-day nostrums.

INTRAVASCULAR ANTISEPSIS.

The daily papers made sensational news of a recent case of puerperal septicemia in New York which recovered under treatment by intravenous injections of formaline. Large expectations were built upon this case. The experiment was repeated upon many patients in various parts of the country and with various results. Fortunately, no physician tried to inject formaline in such amounts as the lay papers reported Dr. Barrows to have used. No man could have done so, indeed, for death must have inevitably resulted before one-tenth of such a dose could have been administered.

Experimental evidence was soon published indicating that the formalin treatment of septicemia is irrational, and perhaps dangerous. Drs. Payne and Park of the New York City Health Department found that rabbits were not protected by formalin injections from the fatal effects of pneumococcus or streptococcus infections. The rabbits receiving formalin died earlier than those which were untreated. Short of a lethal dose no amount of formalin sufficed to destroy the organisms in the blood of rabbits.

The studies of Brickdale upon intravascular antisepsis were published, but had not yet reached this country before Barrows' case occurred. These experiments are reviewed on another page of the Journal, and the author's conclusions are that rabbits injected daily with non-toxic doses of oxycyanide of mercury, formaldehyde, chinosol, or protargol are not protected from the usual effects of a previous inoculation with anthrax, and that chinosol and formaldehyde in large doses so depress rabbits infected with pneumococcus that they die sooner than untreated animals.

These two sets of experiments showed what results might be expected in the infection of animals, but were no more than suggestive of the probable results in human medicine. Light upon this aspect of the question comes from an article by Albert Robin, who reports two cases which indicate that internal antisepsis may produce increased susceptibility or aggravated intensity of certain infections. A syphilitic woman who had been under intensive mercurial treatment for thirty-six days was attacked by a broncho-pneumonia which killed her in four days. Another woman having secondary syphilis, who had been subjected to similar treatment for fifteen days, contracted typhoid fever. She had phlebitis and gangrene, and died on the

twenty-first day. These patients, who were saturated with a powerful germicide, effective against syphilis, were not protected against the organisms of broncho-pneumonia nor against the bacillus of Eberth. There are theoretic reasons for believing that mercurialization may be injurious in typhoid fever, and in each of these cases there is reason for believing that the intercurrent infections were distinctly aggravated.

RABIES.

The death of a child of a prominent New York physician has called public attention to the favorable conditions for the spread of that most dreadful disease, rabies. In Chicago rabies is unusually prevalent, and the disease has been discussed recently in the local medical societies. Baltimore has had a considerable visitation of rabies, but no human cases.

Dr. H. D. Gill, a veterinary surgeon of New York, has lately asserted that the agents of the Society for the Promotion of Cruelty to Animals do not deal fairly with the dogs. They remove dogs from the streets and convey them in wagons to the pounds. The dogs fight in the wagons and at the pounds, so that the chance of getting rabies is materially improved, but, nevertheless, the service is not, Dr. Gill thinks, a fair return for the large income enjoyed by the Society.

The city ordinances of New York require every dog when on the street to be accompanied by a responsible person, and to be in constant control by means of a leash not more than four feet long. This ordinance is not enforced. A measure is now proposed requiring all dogs to be securely muzzled while on the street or in public places. This proposal has aroused the vigorous opposition of the Society for the Promotion of Cruelty to Animals, and the president of this amiable association has taken his case into the columns of the daily papers. He says, according to *Medical News,* that the muzzle is necessarily "inconvenient" to a dog, and may be so "distressing" that a dog may "tear at the muzzle with such violence as to lacerate its whole face and actually tear the claws out of its own feet." In one instance the president has seen a dog behave in this hysterical manner. Of course, it was a mistake to have muzzled this extraordinary dog. A humane person must have suffered acutely while witnessing the enraged attack of a dog upon a muzzle. The dog should have been separated from his head.

The president has made a "long and extensive study" of the subject, and he has been longer and more extensively convinced that rabies is extremely rare among dogs, and yet rarer in man. He believes that the existing ordinance requiring dogs to be leashed is better than a muzzling ordinance, and so it is, considering the convenience of dogs. The existing ordinance would be better still if it provided for attachments of equal security at both ends of the leash. To be sure, there is no popular demand for a law compelling a dog to bite his owner first or exclusively. The chances are that this will happen under ordinary circumstances, but still it would be a convenience to dogs if one good bite were guaranteed. A dog who respects himself ought not to wear the collar of a man which will not agree to a fair proposition.

Medical Items.

Dr. Henry D. Purdum has been appointed resident physician to the insane department, Bayview Asylum.

Contracts have been awarded for the construction of the new hospital at Cambridge, Md. The cost is $35,000.

On April 16 a meeting of the physicians of Talbot county was held at Easton to discuss the establishment of a public hospital.

The Convalescent Home of the Children's Hospital, Boston, received from an anonymous benefactor an Easter gift of $10,000.

Drs. Osler and Welch gave a dinner on April 18 to celebrate the reappearance of *Index Medicus*. Dr. Robert Fletcher was the guest of honor.

A public meeting to discuss tuberculosis was held in McCoy Hall on Friday evening, April 24. Dr. Herman Biggs of New York was the chief speaker.

Mr. Charles Stevens, secretary of the Anti-vaccination League of Milwaukee, died recently of smallpox. His infection was from its onset intensely virulent.

The auction sale of the collection of antiques belonging to the late Dr. W. H. Crim began on April 22. A handsome catalogue has been printed, and lists some 3000 articles.

Dr. George J. Preston, secretary of the Lunacy Commission, and Dr. Edward M. Brush addressed the Bar Association upon the laws concerning the commitment of insane persons.

Smallpox appeared recently at a railroad camp near Homburgville, Baltimore county. The patients were newly arrived, and came, it is said, from Virginia. There were in all eleven cases.

On April 21 a reception was given in the hall of the Medical and Chirurgical Faculty to Dr. Eugene F. Cordell in honor of the completion of his Centennial Volume of the Medical Annals of Maryland.

Dr. Florence R. Sabin of Baltimore has been awarded the prize of $1000 offered two years ago for the best work of scientific research by women. Her communication was a study of the lymphatic system.

Dr. Julius B. Ransom, physician to the State prison at Dannemora, N. Y., says that one-fourth of the prisoners are tuberculous. There are accommodations for 54 out of the 250 consumptive prisoners.

Mr. Andrew Carnegie has offered to pay all the expenses of the Cornell students attacked by typhoid fever. The amount will reach, it is estimated, $50,000. At a recent mass-meeting of students the sum of $1000 was raised for this purpose.

Dr. James Bosley, health commissioner of Baltimore city, has made formal complaint to the State Board of Health of the management of a smallpox outbreak at a railroad camp in the twelfth district of Baltimore county. The sanitary officer is Dr. John C. Schofield.

Prof. Karl Hohn has invented a new musical instrument whose therapeutic virtues he expects to demonistrate at the World's Fair in St. Louis. The instrument is an addition to the armamentarium of alienists and "missionaries to the heathen." Its music puts the hearers to sleep. Its influence upon the performer is not described.

A lady in Tennessee has sued the Pullman Company for $1999.99 for the loss of a night's sleep. She rode in a sleeping car from Nashville to Memphis. Among other occupants of the car were some members of the State legislature, who made a great deal of noise and subjected the lady to humiliation and annoyance, besides keeping her awake.

Dr. Howard Kelly has brought suit against the Western Union Telegraph Co. for failure to deliver a telegram calling him to Cambridge, Md., to do an important operation. Dr. Kelly was on the through train from Boston to Baltimore, and telegrams were addressed to him at New Haven and at Trenton. Neither telegram was delivered, and the operation, one of urgent necessity, was not performed.

Dr. James A. Steuart died at his home in Baltimore on March 27, aged seventy-four. He was the son of Dr. Richard Steuart, founder of the Maryland Hospital for the Insane. His grandfather was also a physician, Dr. James Steuart, a graduate of the University of Edinburgh. Dr. Steuart was graduated at the Maryland University School of Medicine in 1850. From 1873 to 1889 he was health commissioner of Baltimore city, and from 1894 to 1897 was secretary of the State Board of Health.

Dr. Wm. F. Smith died at his home in Baltimore on April 14, aged thirty-eight years. He was graduated in 1889 from the College of Physicians and Surgeons. When his health broke down he was professor of anatomy in the College of Physicians and Surgeons and in Baltimore College of Dental Surgery.

Among the Maryland physicians attending the meeting of the American Medical Association at New Orleans will be Drs. Wm. H. Welch, Geo. J. Preston, C. F. Bevan, John D. Blake, Samuel T. Earle, J. H. M. Knox, Harry T. Marshall, John S. Fulton, Thos. B. Futcher, T. S. Cullen, H. O. Reik, Wm. S. Thayer, Stuart Paton, H. Woods, Thos. McRae, Marshall T. Price, Randolph Winslow.

The GeneralAlumni Association of the University of Maryland met on April 22 at the hall of the Medical and Chirurgical Faculty of Maryland to discuss plans for combining the various departments and enlarging the scope of the university. Mr. B. Howard Haman, president of the Association, made a stirring address. Dr. B. Merrill Hopkinson read a number of selections from a book of lyrics by Dr. John W. Palmer.

The 105th annual meeting of the Medical and Chirurgical Faculty of Maryland was held on April 28, 29, and 30. The program was as follows:

Tuesday, April 28—Preliminary Session.—3.30 P. M., reception of members of the Faculty by the president, Dr. William Travis Howard; Prof. R. W. Wood, by invitation: "Color Photography." Regular meeting, 8 P. M.: Annual address by the president, Dr. William Travis Howard; presentation of the portrait of the late Dr. Aaron Friedenwald by Dr. Harry Friedenwald; address by Dr. Thomas S. Latimer. Followed by a "smoker" in the hall of the Faculty.

Wednesday, April 29—Scientific Sessions.—Morning Session from 10 to 12: Dr. Robert W. Johnson: "Twenty-five Recent Operations for Wounds, etc., of Abdominal Viscera;" Dr. William Herbert Pearce: "Medical Communism;" Dr. Charles O'Donovan: "Baltimore's Water Supply—Is It Enough? Is It Good Enough? Can It Be Improved?" Dr. Robert Reuling: "A Study of the Changes in the Central Nervous System in Three Cases of Pernicious Anemia;" Dr. J. C. Hemmeter: "Observations on Two Cases of Spleno-Megaly, with Cirrhosis of the Liver—Advanced Disorganization of the Blood and Profuse Gastric Hemorrhages." Afternoon Session at 2 P. M.: Dr. Hiram Woods, Jr.: "Prevention of Serious Complications in Ear Diseases;" Dr. Charles F. Davidson: "Some Observations Regarding the Source of the Infection of Typhoid Fever;" Dr. W. B. Wolf: "Some Remarks on a New Modification of the Bottini Operation;" Drs. Henry F. Cassidy and Francis Casey Bayne: "A Case of Chronic Trachoma Cured by the *x*-Ray —The First Case in Medical Annals;" Drs. Julius Friedenwald and Lewis J. Rosenthal: "A Report of All Cases of Removal of Foreign Bodies from the Stomach;" Drs. W. S. Baer and Henry W. Kennard: "The Diagnostic Value of Tuberculin in Orthopedic Surgery;" Dr. Thomas R. Brown: "Some Minor Communications from the Clinical Laboratory;" Dr. Theodore Cook, Jr.: "Tubercular Periostitis of the Floor of the Orbit." Executive Session, 8 P. M.

Thursday, April 30—Scientific Sessions.—Morning Session from 10 to 12: Dr. Henry Barton Jacobs: "Our Need of a Mountain Sanatorium for Indigent Consumptives;" discussion on methods for the prevention of the spread of tuberculosis in the city and State, to be opened by Dr. W. S. Thayer, and participated in by Drs. William H. Welch, William Osler, H. B. Jacobs, and J. S. Fulton; Dr. C. Hampson Jones: "The Diagnosis and Prophylaxis of Smallpox, illustrated by Lantern Slides;" Dr. William Royal Stokes: "The Pathology of Smallpox, with Lantern Slides;" Dr. H. O. Reik: "Some Modifications of the Cataract Operation—An Exhibition of New Instruments and Report of Cases." Afternoon Session at 2 P. M.: Dr. R. Percy Smith: "The Treatment of Puerperal Eclampsia, with Report of Cases;" Dr. E. B. Claybrook: "Laceration of the Bowel Without External Evidence of Injury—Report of a Case, with Remarks on Diagnosis;" Dr. John Turner: "The Anatomical Arrangement of the Respiratory Apparatus of Birds and Other Animals;" Dr. Wilbur F. Skillman: "Physical Examination of the Gastric Patient;" Dr. Frank Martin: "Report on Cases of Cholecystectomy;" Dr. J. C. Clark: "On the Increase of Insanity;" Dr. Hugh H. Young: "A Contribution to the Technique of Perineal Prostatectomy;" Dr. A. G. Barrett: Exophthalmic Goitre;" Dr. L. K. Hirshberg: "The Effects of the Streptococcus on the Cortical Nerve Cell in Meningitis." Final Session, 8 P. M.: Annual oration: Prof. Simon Flexner, "An Aspect of Modern Pathology." Followed by a "smoker."

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A FURTHER INVESTIGATION OF THE MILK SUPPLY OF BALTIMORE WITH ESPECIAL REFERENCE TO ITS SUITABILITY FOR INFANT FEEDING.

By Edwin H. Schorer and Victor H. Bassett.

From the Laboratory of the Thomas Wilson Sanitarium.*

READ BEFORE THE BALTIMORE PEDIATRIC CLUB, MAY 21, 1903.

In the Maryland Medical Journal for June, 1902, was published an article entitled "An Examination of Milk Supplied to Infants Suffering with Summer Diarrhea, with a Plea for a Purer Milk Supply Accessible to the Poor of Baltimore." The experimental work of the article dealt with the examination of milk sold by local dealers to the patients of the Thomas Wilson Sanitarium in the summer of 1901, previous to their admission as patients. The conclusion was reached that a considerable part of the milk supplied to the people of the class from which the sanitarium draws its patients was adulterated by the addition of water, and that this adulteration and the high bacterial content of these milks rendered them unsafe for infant-feeding. During the summer of 1902 these examinations were continued and extended to include a large number of samples from various sources, with the purpose of determining the extent of such adulteration and of locating, if possible, its source.

The most important conditions in the production of a pure milk are cleanliness and adequate refrigeration. The determination of the bacterial content of a milk supply is considered the best experimental test of these conditions. While both are of primary importance in all stages of the handling of milk, cleanliness at the dairy farm is most essential for the production of a pure supply, and is measured by the number of bacteria in a milk at the dairy farm. Refrigeration is necessary for the preservation of a pure milk, and is determined by the bacterial content at the time the milk is consumed. The quantitative bacterial determination is of special value as a sanitary test, and as such is coming into increasing use in board of health work. Its value is independent of the character of the

*We are indebted to Dr. Wm. R. Stokes and Dr. G. W. Lehmann of the City Health Department for the use of Laboratory facilities in Baltimore, and for much advice and help in the conduct of this investigation.

specific organisms that may be found. The ordinary physical and chemical examinations have greater value as commercial tests, but, in view of the fact that contamination with the specific organisms of disease may occur through adulteration with polluted water, are also of sanitary value.

In order to obtain data as to the condition of Baltimore's milk supply and the changes through which it passes during production, transportation, and delivery to consumers, samples were obtained and analyzed from the following sources: (1) dairy farms; (2) receiving stations at the railroad terminals; (3) milk wagons; (4) smaller dairies; (5) small stores; (6) sources which supplied patients of the Thomas Wilson Sanitarium previous to their admission; (7) dairies of the larger and better class. In addition, analyses were made of milk condemned by the city milk inspectors. For assistance in the collection of samples we are indebted to the officials and milk inspectors of the City Health Department.

METHODS OF INVESTIGATION.

Samples of milk were collected between 6 and 11 A. M. in sterilized glass bottles and kept until examination in a small ice-box, so arranged that it could be conveniently carried. Efforts were made to ascertain the age of the milk, the sanitary conditions surrounding the places of dispensation, and the source of the supply, whether produced in the city or in the country.

The following methods were used in the analysis: (1) the specific gravity was determined from readings on the standard lactometer, with corrections for temperature; (2) fat was determined by the Babcock method; (3) acidity was ascertained by titrations with N/8 sodium hydroxide solution, with phenolphthalein as indicator. The results are given in terms of percentage of lactic acid; (4) the presence of formalin preservative was detected by the use of sulphuric acid and ferric chloride; (5) bacteriological analyses were made by seeding plate cultures with 1 c. c. of 1-100 or 1-1000 dilution of milk in sterile water. Agar was used as a culture medium, as gelatine was found to be inconvenient for our purposes. No essential difference in bacterial count was observed in the use of various media. The plates were incubated for three days at room temperature (60-85° F.) before counting.

Examinations of Milk During the Stages of Production and Sale at Baltimore During the Summer of 1902.

MILK AS PRODUCED AT THE FARMS.

Better class of dairy farms, 33 samples.

Averages: Specific gravity, 1.031; fat, 5 per cent.; acidity, 0.16 per cent.

Bacterial count per c. c.: Neutral agar, 76,500.

All of these samples were obtained from one dairy farm.

Ordinary dairy farms, 40 samples.

Averages: Specific gravity, 1.031; fat, 4 per cent.; acidity, 0.18 per cent.

Bacterial count per c. c.: Neutral agar, 349,000.

All of these samples were obtained from one dairy farm.

MILK AS RECEIVED AT THE RAILROAD STATIONS.

Fulton Station of the Western Maryland Railroad, 10 samples.

Averages: Specific gravity, 1.029; fat, 6.6; acidity, 0.207 per cent.; formaldehyde in 12.5 per cent. of the samples.

Bacterial count per c. c.: 1 per cent. acid agar, 2,288,000; neutral agar, 2,175,000.

One dairy company has a refrigerator car. All milk produced on the previous day.

Lehigh Station, Maryland Pennsylvania Railroad, 10 samples.

Averages: Specific gravity, 1.0296; fat, 5.32 per cent.; acidity, 0.189 per cent.; formaldehyde in 30 per cent. of the samples.

Bacterial count per c. c.: 1,441,000; neutral agar, 1,181,000. Some of the milk was more than twenty-four hours old.

Calvert Station of the Pennsylvania Railroad, 10 samples.

Averages: Specific gravity, 1.0296; fat, 5.47 per cent.; acidity, 0.179 per cent.; formaldehyde in 30 per cent. of the samples. Most of the milk produced on the previous day.

Bacterial count per c. c.: 1 per cent. acid agar, 1,688,700; neutral agar, 1,686,700.

Hillen Station of the Western Maryland Railroad, 11 samples.

Averages: Specific gravity, 1.0296; fat, 5.88 per cent.; acidity, 0.199 per cent.; formaldehyde in 9.1 per cent. of the samples.

Bacterial count per c. c.: 1 per cent. acid agar, 1,390,000; neutral agar, 1,294,000. Most of the milk produced the previous day.

President-Street Station, Pennsylvania Railroad, 10 samples.

Averages: Specific gravity, 1.0293; fat, 6.93 per cent.; acidity, 0.18 per cent.; formaldehyde not present in any of the samples.

Bacterial count per c. c.: 1 per cent. acid agar, 2,246,000; neutral agar, 2,881,000.

Camden Station of the Baltimore & Ohio Railroad, 11 samples.

Averages: Specific gravity, 1.0294; fat, 5.46 per cent.; acidity, 0.193 per cent.; formaldehyde in 18.2 per cent. of the samples.

Bacterial count per c. c.: 1 per cent. acid agar, 1,504,000; neutral agar, 1,129,000.

Summary: 60 samples.

Averages: Specific gravity, 1.0296; fat, 5.82 per cent.; acidity, 0.184 per cent.; formaldehyde in 15 per cent. of the samples.

Bacterial count per c. c.: 1 per cent. acid agar, 1,768,000; neutral agar, 1,711,000. Of these 60 samples, 21 had more than the average bacterial count, 2 were at the average, and 36 were below the same. Moreover, 33 samples, or 55 per cent., of the milk had more than 1,000,000 bacteria per c. c., and 43 samples, or 71 per cent., had more than 500,000 per c. c.

MILK AS SOLD FROM WAGONS.

Northwestern District (near 800 block of Fulton avenue), 10 samples.

Averages: Specific gravity, 1.0293; fat, 3.98 per cent.; acidity, 0.203 per cent.; formaldehyde in 50 per cent. of the samples.

Bacterial count per c. c.: 1 per cent. acid agar, 1,288,800; neutral agar, 937,000. Six of the 10 samples were of milk of the day before.

Northwestern District (Maryland and North avenues), 11 samples.

Averages: Specific gravity, 1.0292; fat, 4.21 per cent.; acidity, 0.210 per cent.; formaldehyde in 54 per cent. of the samples.

Bacterial count per c. c.: 1 per cent. acid agar, 4,077,000; neutral agar, 3,360,000. Ten of the 11 samples were of milk of the day before.

Northeastern District (near Calvert Station), 10 samples.

Averages: Specific gravity, 1.0292; fat, 3.94 per cent.; acidity, 0.187 per cent.; formaldehyde in 70 per cent. of the samples.

Bacterial count per c. c.: 1 per cent. acid agar, 5,071,000. Nine of the 10 samples were of milk of the day before.

Northeastern District (near Belair Market), 7 samples.

Averages: Specific gravity, 1.0291; fat, 4.4 per cent.; acidity, 0.216 per cent.; formaldehyde in 71 per cent. of the samples.

Bacterial count per c. c.: 1 per cent. acid agar, 5,353,000. Six of the 7 samples were of milk of the day before.

Southeastern District (near Patterson Park), 11 samples.

Averages: Specific gravity, 1.0291; fat, 3.74 per cent.; acidity, 0.197 per cent.; formaldehyde in 45 per cent. of the samples.

Bacterial count per c. c.: 1 per cent. acid agar, 4,924,000. Seven of the 11 samples were of milk of the day before.

Summary: 49 samples.

Averages: Specific gravity, 1.0293; fat, 4.12 per cent.; acidity, 0.194 per cent.; formaldehyde in 57 per cent. of the samples.

Bacterial count per c. c.: 1 per cent. acid agar, 4,038,000. Of these samples, 28 were below and 19 above the average in bacterial count, and 37 samples, or 75 per cent., had more than 1,000,000 bacteria per c. c.; 39 samples, or 77 per cent., were milk of the day before.

In connection with the report on the milk as it is sold from wagons on the street, it might be said that many dairymen sell milk over twenty-four hours old in the early part of the forenoon and *after* 10 A. M. sell milk of that same day or of the night before. Moreover, it was observed that a fair percentage of the wagons were in generally good sanitary condition.

MILK AS SOLD IN EIGHT STORES IN VICINITY OF BELAIR MARKET.

Averages: Specific gravity, 1.0291; fat, 4.64 per cent.; acidity, 0.205 per cent.; formaldehyde in 50 per cent. of the samples.

Bacterial count per c. c.: Neutral agar, 5,162,000 (five samples). Of this number of samples, three were below the average, one had the average number, and one was above the same, but each of the five samples had more than 1,000,000 bacteria per c. c.

Seven of the eight samples were of milk of the day before. Some of these stores were very dirty, and some of the places were crowded.

MILK USED BY PATIENTS OF THE THOMAS WILSON SANITARIUM BEFORE ADMISSION TO THE SANITARIUM.

(60 Samples.)

The mothers of the children that were taken to the sanitarium tained the milk used for infant-feeding. A majority of the families used milk bought at stores in their immediate vicinity. Sixty samples of milk from these sources were examined, with the following results:

No.	Source.	General Condition.	Spec. Grav.	Total Solids.	Fat.	Sols. Not Fat.	Facilities for Refrigeration.	Lactic Acid Percgs.	Bacteria Per c. c.
1	Small dairy	Good	....	....	..	....	Good ice box.	0.202	1,960,000
2	Small store	Good	....	....	..	....	Good ice box.	0.191	7,800,000
3	Small store	Fair	...	....	..	...	Poor ice box..	0.189	484,000
4	Dairy	Fair	....	...	..	....	Fair ice box..	0.157	518,000
5	Grocery	Good	....	....	..	....	Good ice box.	0.199	378,000
6	Small store	Fair	....	....	..	....	Water cooled	0.230	1,602,000
7	Small grocery	Fair (cows in city)	....	....	..	....	Water cooled	0.225	4,060,000
8	Dairy	Good	....	....	..	....	Very good	0.247	2,065,000
9	Confectionery	Fair	....	....	..	....	Fair ice box..	0.186	560,000
10	Dry g'ds and groceries	Poor	....	...	..	....	Very poor	0.304	2,800,000
11	Residence	Clean (cows in city)	...	....	..	....	Water cooled	0.205	3,778,000
12	Dairy	Clean	....	....	4.5	....	Fair ice box..	0.158	2,870,000
13	Residence	Neat	....	....	4.5	....	Fair ice box .	0.221	4,340,000
14	Small store	Poor	.	....	2.8	....	No refrig't'n.	0.214	9,520,000
15	Small store	Good	....	....	2.6	....	Fair ice box..	0.199	7,140,000
16	Large dairy	Good	....	...	3.6	....	Ex. ice box..	0.203	66,000
17	Small grocery	Fair	....	....	4.5	....	Very poor i.b.	0.189	2,730,000
18	Store and dairy	Good	....	....	4.0	....	Good ice box.	0.216	6,720,000
19	Dairy	Very bad	....	....	4.0	....	Cold, but bad	0.194	4,680,000
20	Grocery	Good	....	....	5.2	....	Good	0.202	1,760,000
21	Wagon	Fair	....	....	3.1	...	....	0.190	2,540,000
22	Grocery	Clean	....	....	3.6	....	Good ice box.	0.216	4,830,000
23	Grocery	Clean	....	....	4.7	....	Good ice box.	0.213	7,840,000
24	Dairy	Very good	....	....	3.0	...	Ex. ice box..	0.27	4,790,000
25	Grocery	Fair	....	....	2.3	....	Good ice box.	0.675	14,920,000
26	Grocery	Poor	....	....	4.4	...	No ice box...	0.203	7,070,000
27	Restauraunt	Fair	....	....	..	....	Good ice box.	0.243	5,040,000
28	Small store	Fair	1.029	11.72	3.6	8.12	Good ice box.	....	2,296,000
29	Small store	Fair	1.026	10.25	3.0	7.25	Well refrig...	....	5,040,000
30	Grocery	Bad	1.028	10.75	3.0	7.75	Water cooled	....	6,160,000
31	Dairy	Fair	1.029	12.44	4.2	8.24	Fair ice box .	....	3,080,000
32	General store	Very bad	1.029	10.52	2.6	7.92	Very poor i.b.	0.259	8,400,000
33	Small store	Clean	1.020	....	2.8	.	Good ice box.	0.159	2,450,000
34	Residence	Poor	1.032	11.98	3.2	8.78	Water cooled	0.212	5,320,000
35	Small store	Good	1.028	10.99	3.2	7.79	Fair ice box..	0.18	10,640,000
36	Confectionery	Fair	1.028	10.27	2.6	7.67	Fair ice box..	0.191	7,840,000
37	Wagon	.....	....	...	..	....	....	0.211	3,850,000
38	Small store	Fair	....	....	5.0	....	Good ice box.	0.233	8,400,000
39	Dairy	Poor	....	....	4.0	....	Fair ice box..	0.288	10,000,000
40	Small grocery	Fair	....	....	3.8	....	Fair ice box..	0.203	6,160,000
41	Dairy and grocery	Crowded	....	....	5.0	....	Clean ice box	0.203	4,550,000
42	Wagon	.....	....	....	2.2	....	... .	0.181	10,640,000
43	Small grocery	Good	1.030	11.49	3.2	8.29	Fair ice box..	0.297	10,000,000
44	Small grocery	Fair	1.027	11.58	3.9	7.68	Fair ice box..	0.203	812,000
45	Grocery	Good	1.032	12.46	3.6	8.86	Ex. ice box..	0.27	7,280,000
46	Grocery	Fair	1.029	10.28	2.4	7.88	Good ice box.	0.423	644,000
47	Grocery	Fair	1.029	14.12	5.6	8.52	Good ice box.	0.184	8,960,000
48	Dairy	Poor	....	....	..	....	Ice box, no ice	0.208	1,800,000
49	Grocery	Fair	....	....	..	....	Good ice box.	0.262	14,000,000
50	Small store	Good	....	....	..	....	Good ice box.	0.248	10,640,000
51	Dairy	Fair	1.029	....	..	...	Good ice box.	....	8,000,000
52	Dairy	Very Bad	1.029	....	..	....	Very poor i.b.	....	11,230,000
53	Dairy	Fair	1.029	12.20	4.0	8.20	Good ice box.	0.203	10,000,000
54	Dairy	Fair	1.029	12.68	4.4	8.28	Good ice box.	0.186	4,340,000
55	Dairy	Crowded	1.028	9.55	1.5	8.05	Fair ice box..	....	630,000
56	Dairy	Fair	1.029	13.64	5.2	8.44	Good ice box.	0.221	.....
57	Dairy	Good	1.028	11.83	3.8	8.03	Good ice box.	0.194	4,720,000
58	Dairy	Crowded	1.029	14.36	5.8	8.56	Clean ice box	0.187	1,148,000
59	Small store	Fair	1.029	12.68	4.4	8.28	Fair ice box..	0.188	4,340,000
60	Dairy	Fair	1.030	12.45	4.0	8.45	Good ice box.	0.205	10,000,000
	Average	.....	1.028	11.82	3.63	8.15	.....	0.226	5,094,000

From the table the following averages are obtained:

Specific gravity, 1.028 (23 samples). Eight samples were below the requirements of the law, 10 at 1.029, and 4 above the same.

Fat, 3.63 per cent. from 42 samples. Of these, 9, or 21.8 per cent., were below 3 per cent.

Acidity, 0.226 per cent. from 51 samples, of which all but six were below 0.27 per cent.

Formaldehyde: 43 per cent. contained formaldehyde preservatives.

Bacterial count: Neutral agar, 5,094,000, 59 samples. Of these milks examined, 8 samples, or 13.5 per cent., had less than 1,000,000 bacteria per c. c. Thirty-five of the 52 samples were from milk of the day before.

SANITARY CONDITIONS AT THE STORES AND DAIRIES.

The condition of some of these stores is poor indeed. The places are generally cleaned in the morning, so that they appear as neat as it would seem possible for them ever to be; still, they are generally small, and are attended by some member of the family. For many reasons these places impress an observer as being ill-suited for milk depots. Most of these stores get their milk from cows kept in the country; nevertheless, there were samples obtained from four places where the cows were kept in back yards, one place having eight cows, while at another place four cows were kept in a barn approximately 10x12 feet. Cows kept in the city are generally fed on slops, to which bran or some other ground feed is added.

SAMPLES OF MILK SPILLED BY THE CITY INSPECTORS.

These were samples of milk "spilled" by the milk inspectors of the Health Department, and were taken at any time convenient to us, so that the selections are not arbitrary, but represent a fair estimate of the milk that is condemned by the health officers because it does not meet the ordinance requirements of 3 per cent. fat, 1.029 specific gravity, and 12 per cent. total solids. The first of these samples was obtained the 7th of July and the last the 16th of August, during which time 574 gallons of milk were condemned. The following is the result of the examination of 17 samples of milk:

Averages: Specific gravity, 1.018; fat, 3.23 per cent.; acidity, 0.135 per cent. Formaldehyde was present in 43 per cent. of the samples. It is to be noted that 8 of these samples had more than 3 per cent. of butter fat, and 2 had more than 5 per cent. In all milks below 1.000 specific gravity the acidity was below 1 per cent., and in all cases where the fat was above 3 per cent. the acidity was 1.8 per cent. or above.

Bacterial count per c. c.: 1 per cent. acid agar, 8,755,000; neu-

tral agar, 7,052,000, 13 samples. Only 2 of the 13 samples had less than 1,000,000 bacteria per c. c.

MILK FROM THE BETTER CLASSES OF DAIRIES.

In this class we include 26 samples from seven of the larger and more generally recognized dairies.

Averages: Specific gravity, 1.031; fat, 4.8 per cent.; acidity, 0.196 per cent.; formaldehyde was not found in any of the samples.

Bacterial count per c. c., 1,099,000.

The results which have been obtained are given in the following table:

TABLE SHOWING CONDITION OF BALTIMORE MILK DURING JULY AND AND AUGUST, 1902.

	At Dairy Farm.		At Railroad Station. 60 Samples.	As Sold from Wagons. 49 Samples.	As Sold in Stores N'r Belair Market. 8 Samples.	As Supplied to Sanitarium Patients before Admission. 60 Samples.	Better Class of Dairies. 26 Samples.	Condemned by Milk Inspectors. 17 Samples.
	Better Class. 33 Samples.	Ordinary. 40 Samples.						
Specific gravity.....	1.031	1.031	1.0296	1.0293	1.0291	1.028	1.031	1.020
Fat, %.....	5.0 %	4.0 %	5.82 %	4.12 %	4.64 %	3.5 %	4.93 %	3.23 %
Lactic acid, %.....	0.16%	0.18%	0.184%	0.204%	0.205%	0.206%	0.196%	0.135%
Formaldehyde, %.....	....	....	15 %	57 %	50 %	43 %	0.00 %	43 %
1% acid agar.....	....	....	1,768,000	4,038,000	. ..	....	....	8,755,000
Neutral agar.....	76,500	349,900	1,711,000	...	5,162,000	4,876,000	1,339,000	7,052,000
Bacteria per c. c. Less than 1,000,00	....	....	45 %	24.5%	0.00%	17.3 %	77 %	15.4 %
Percent'ge of milk sold on day of milking ...	....	....	....	22.4%	12.5 %	32.7 %	....	....

DISCUSSION OF RESULTS.

Fat and Specific Gravity.

A gradual and steady reduction in both fat and specific gravity is noted as the milk passes through the hands of the dealer. The change in fat is marked, while the lactometer reading is subject to less variation. Simultaneous skimming of milk and dilution with water produce little change in specific gravity.

Of 24 samples supplied to patients of the sanitarium before admission, 8, or 33 per cent., were below 1.029 in specific gravity, and of 42 samples, 9, or 21 per cent., contained below 3 per cent. fat.

If one considers the percentage of fat in milk as it is received at the railroad stations and as it is sold, one is greatly impressed by the fact that although milk as it is sold contains more than 3 per cent., the city requirement, it nevertheless has from 1.2 to 2.3 per cent. less of fat than when it is received at the railroad stations. From this it is evident that there is an adulteration by water. The lower percentage of fat in milk at the dairy farms is accounted for by the fact that this milk was all received from one farm, and so is

not a mixed milk; therefore not comparable to the other results of fat and specific gravity.

Acidity.

Freshly-drawn milk has a distinct acidity, due to dissolved carbon-dioxide, acid phosphates, etc. With the growth of bacteria the acidity increases, due to the formation of lactic acid and other allied acids. This increase is moderate during the period of incubation, as the preliminary bacterial growth is called. When the bacterial content becomes high and multiplication is rapid, the acidity also increases rapidly until the casein is precipitated and the milk ren-

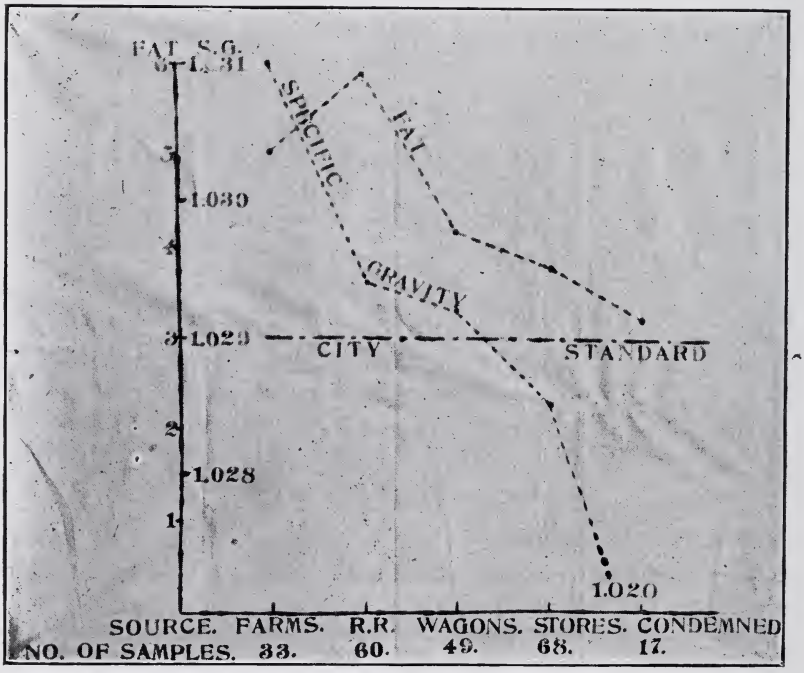

DIAGRAM 1.—Showing variations of specific gravity and fat, according to source of samples.

dered unsalable. To prevent this a common practice is to keep down the acidity by the addition of alkaline preservatives, or to prohibit bacterial growth by the addition of bactericidal substances, of which formaldehyde is the most commonly used. Milk of twelve to twenty-four hours' age, properly preserved, will have an acidity equivalent to 0.15 to 0.19 per cent. lactic acid. Exceptionally good milk under very favorable circumstances may have an acidity as low as 0.13 per cent. twelve to eighteen hours after production. In practice such results are rarely met with in unadulterated milk.

The addition of water often lowers the acidity. For instance, the percentage of acidity of the condemned samples averaged 0.135 per cent. of lactic acid.

As a means of determining the suitability of a milk for infant-feeding the acid test has been used successfully during the past two summers at Mt. Wilson. Milk of an acidity less than 0.14 per cent. should be rejected as adulterated by the addition of water or alkaline preservatives. Milks of over 0.2 per cent. acidity are usually of high bacterial content, and as such cannot be regarded as free from the suspicion of contamination. If one considers the samples supplied to patients of the sanitarium, one finds that of 53 samples, 34, or 64 per cent., are above 0.2 per cent. acidity. In general, acidity increases with bacterial count, but since milk is generally sold during the stage of incubation, the increase in acidity is not strictly a measure of bacterial content. Individual samples with high acidity usually show enormous numbers of bacteria. For example, sample No. 25 has an acidity of 0.675 per cent. and a bacterial count of 14,920,000. Occasional samples show high acidity with a low count. Sample No. 46 has an acidity of 0.423 per cent. and a count of 644,000 bacteria per c. c. Here the use of an acid preservative could be suspected. A low acidity with a high count, as in sample No. 35, with an acidity of 0.18 per cent. and a count of 10,640,000, indicates the use of an alkaline preservative.

Formaldehyde and Other Preservatives.

During the summer months it is often very hard to keep milk from souring, and to counteract this the practice of adding preservatives is often resorted to. As was found during the summer of 1901, so also in the summer of 1902, formaldehyde, under various trade names, was found to be the most commonly used preservative. The table and chart show that the percentage of cases in which formaldehyde was used as a preservative varied. In milk as it is received at the railroad stations it is found in 15 per cent. of the samples, while when sold to the consumer from 43 per cent. to 57 per cent. contained formaldehyde preservatives. Moreover, it is to be noticed that formaldehyde is found in a larger percentage of milk sold from wagons than in the small stores. This is to be accounted for undoubtedly by the fact that the owner of a small grocery or dairy does not know of the use of preservatives, and only gets small quantities of milk at one time, buying again when that amount has been sold, and thus does not have to consider preservation of milk.

The addition of formaldehyde in small quantities is by many not considered as a harmful practice, but two important facts should be recognized—first, that milk ought to be so produced, aerated, cooled, transported, and sold that no preservative need be added to keep it from souring, and, secondly, that formaldehyde cannot be

safely employed, even in small quantities, under the existing conditions is evident. When preservatives are used the fact is not announced to the various purchasers, who may also use formaldehyde, and so, by several additions, a milk may finally contain a very large and unsafe amount of the preservative. The large amount of formaldehyde found in a number of samples is undoubtedly due to the repeated addition of the preservative in the various commercial stages.

There is no exact correlation between the presence of a preservative, on the one hand, the bacterial count and acidity, on the other, in the same milk; so that the presence of formaldehyde does not

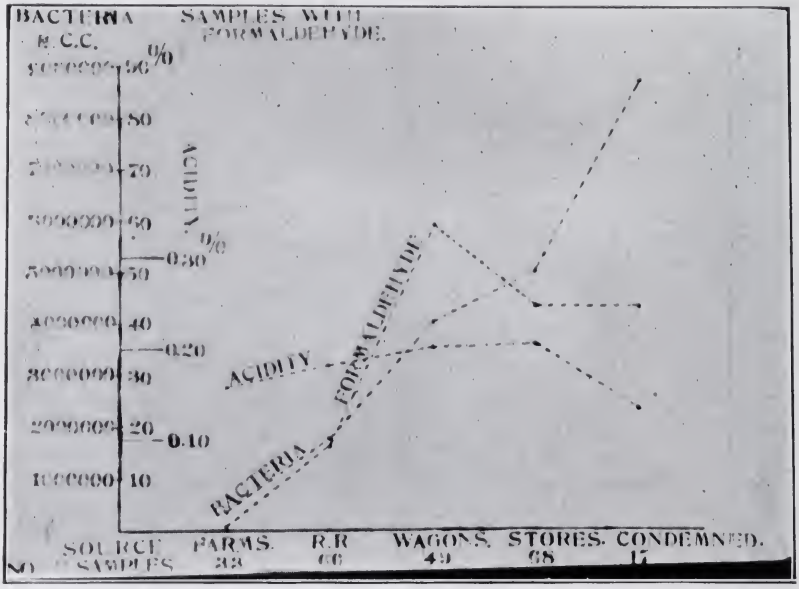

DIAGRAM 2.—Acidity, bacterial count and formaldehyde.

necessarily mean a smaller number of bacteria per c. c., nor a lower percentage of acidity.

Bacteriological Investigations.

Park of the New York Board of Health has proposed as a standard for the purpose of the Board of Health work that 500,000 bacteria per c. c. as the limit at which milk be allowed to enter the city, and 1,000,000 bacteria per c. c. be the limit when the milk is retailed. If the data secured in Baltimore be examined by this standard, it will be seen that the bacterial content of 71 per cent. of the samples secured at the railroad stations are above this limit of 500,000. With

efficient refrigeration during transit milk could be secured below this limit, since the bacterial count at the dairy farm was, respectively, 76,500 and 349,000 for the better and ordinary classes of the dairies. Of the milk delivered to the consumers from the milk wagons, stores and small dairies, of 105 samples, 85, or 81 per cent., show a bacterial content of over 1,000,000. This does not include the watered samples condemned by the lactometer test, of which the average was over 7,000,000 per c. c., and but two of 13 samples were below 1,000,000.

Of the 26 samples obtained from the better class of dairies, but six were above the limit of 1,000,000 per c. c., showing that, with proper care in production and handling, it is possible to meet the New York standard in Baltimore. It is worthy of note that while of the 26 samples, but two were under 100,000, a limit which has been proposed for certified milk, nearly 25 per cent. are so near this limit that a little extra care would enable them to meet the standard.

Of 59 samples supplied to children who afterward became patients of the sanitarium, 51, or 86 per cent., had a bacterial count of over 1,000,000, while the average reached 5,093,000.

The data for acidity, bacterial count and presence of formaldehyde is presented in diagram No. 2.

Seasonal Variation in Bacterial Count.

In order to obtain some data as to the seasonal variation of the bacterial count, samples were taken monthly from twenty of the stations from which patients of the sanitarium had secured milk. The results are given as averages in the following table and expressed graphically in diagram No. 3:

Seasonal variation: January 1, 150,000; February 1, 102,000; March 1, 150,000; April 1, 206,000; May 1, 357,000; June 1, 835,000; July 5, 353,000; August 5, 100,000; September 3, 280,000; October 2, 550,000; November 1, 300,000; December 1, 1,150,000.

During the summer months the bacterial content of milk of this class is greatly increased. A smaller number of tests indicate that changes of this kind are much less marked in the better classes of milk. This is explained by the fact that the original contamination of such milk is not subject to the great variation that is found in milk carelessly produced and handled. The simultaneous occurrence of high bacterial count and the yearly epidemic of summer diarrhea suggests strongly that there is a relation between the two.

Refrigeration of Milk and Its Age at Time of Sale.

A few of the larger shippers use refrigerator cars, but the greater part of the milk is not refrigerated during transportation. With

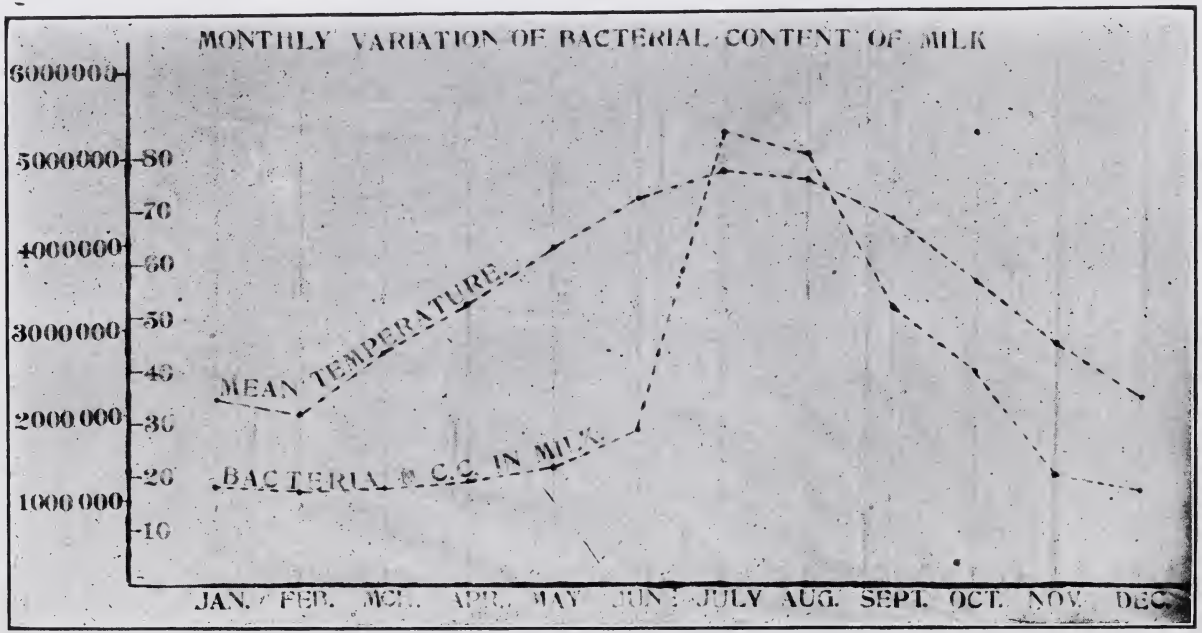

DIAGRAM 3.—Showing seasonal variation of bacterial count.

the exception of bottled milk, but a small part of the supply is iced during transportation in the milk wagon. The larger and moderate-sized dairies have proper facilities for cooling the relatively large amounts of milk which they handle, but the dispensing stations in the small dairies and stores rarely have ice-boxes which are suited for the purpose of preserving milk. In the small stores, especially, the conditions are poor.

Milk is received twice daily at the railroad stations, the morning shipment being the larger. This shipment consists largely of milk produced the night before, while the evening shipment consists almost entirely of milk of the previous milking of the morning. Small shipments from sources near the city are received within a few hours after milking. The early-morning sales are of the milk received the night before; thus this milk is over twenty-four hours old when it reaches the consumer. The sales after 10 o'clock are of milk of the night before, which is not over eighteen hours old when it reaches sale, and is thus to be preferred for infant-feeding. Probably but a small part of the milk sold is over thirty-six hours old.

CONCLUSIONS.

1. Adulteration of milk by the addition of water and preservatives is so common that a considerable portion of the milk supply of Baltimore must be regarded as unsuitable for infant-feeding. Our figures indicate that the adulteration occurs largely while the milk is in the hands of the retailer.

2. The bacterial count and acidity test are satisfactory means of determining the suitability of a milk supply for infant-feeding, and have greater sanitary value than the ordinary physical and chemical tests.

3. The standard proposed by Park (*i. e.*, 500,000 bacteria per c. c. in milk at the receiving station and 1,000,000 in milk offered for sale) are practicable standards for Baltimore, and can be met with moderate care in the production of milk and refrigeration during transportation and dispensation.

4. With slightly improved conditions a number of dairies of the better class could supply milk which could be certified and contain less than 100,000 bacteria per c. c.

SOME REMARKS ON A NEW MODIFICATION OF THE BOTTINI OPERATION.

By W. B. Wolf, M.D.,

Lecturer on Genito-Urinary and Venereal Diseases, Baltimore Medical College.

Jacoby recently published a modification of the instrument generally employed in performing the Bottini operation. In his description he recommends a dial to be attached to the instrument, which controls throughout the operation the extent as well as the direction of the incision with mathematical exactness.

The problem of controlling the knife while making the incision determined upon through cystoscopic observation has until the present time found no practical solution. The instruments mentioned by Wassildo A. Freudenberg and Bierhoff, which present a combination of the Bottini and cystoscope, is limited not alone in its practicability, but also in facility. With the results before us even Freudenberg, in his clinical lectures, which appeared this year, acknowledges this, and claims that it is advisable to replace the old instrument by the new one.

The following conditions must exist during the entire Bottini operation:

1. That the knife actually makes an incision at the desired place.
2. That the knife remains in the tissues in the direction prescribed, it being very important that the smallest deviation shall be indicated on the control dial.
3. The advantages of the new method do not diminish the value of the Bottini-Freudenberg incisor or in any way displace the same.
4. This method can be adopted in all cases.

In order to attain these results the area previously cystoscoped must be indicated on the incisor so that we know the point to begin, and for this purpose an angle, called the control angle, enables the hand, with the aid of the cystoscope, to find the place where the incision should be made.

The control angle is the angle of two surfaces separated in the axis of the cystoscope. One of these surfaces is vertical, and the other usually meets in the center of the reflected area. The control angle or scale is indicated upon a dial which is horizontally connected with the cystoscope, and from this point the scale can be easily distinguished.

At the point of separation of the cystoscope lies the division of the control angle. The one side presents the vertical, and the other combines with the line of separation the direction of the instrument employed. The dial controlling the operation is 8 centimeters in circumference, having in the center a place for the reception of the prism, which it surrounds. The scale on the dial ranges from 0 to 180. No difficulty arises in reading the figures, as the one side presents a polished and the other a dull appearance.

The control dial is attached in such a manner that the number 180

corresponds with the direction of the knife. This direction is especially indicated by a separate point which simultaneously presents the area of the control angle. The other remaining vertical area is constantly marked by an automatic indicator of the length of the dial and fastened to its center.

On the one end of this indicator is a metallic ball which performs the automatic indication, the minutest turning of the cystoscope on its axis being recorded on the indicator.

Having with mathematical exactness found the place of incision, the knife can be allowed to enter the angle and the operation can be performed with the greatest degree of safety. In the Bottini-Freudenberg incisor the dial is situated between the handle and the movable wheel, the arrow indicating on the inverted side of the dial from which it projects. The length of the incision having been previously indicated, care must be now exercised that the dial and the automatic arrow constantly correspond.

One of the advantages derived from the use of the instrument is that the utmost precision is attainable. In order to appreciate this fact one must first view the folds of the hypertrophied lobes at the greatest distance, then the place of incision in the middle of the chosen area, and afterwards place it nearer, so that the angle of incision can be quickly read.

The new method facilitates not alone the exact place at which the incision ought to be made, but controls the direction of the instrument during the entire time. Should the smallest turning of the instrument alter the direction of the incision, the deviation is always indicated on the dial.

The absolute control during this phase of the operation removes the formerly-existing objection when knives, having once become bent into the tissues, the remainder of the instrument could not follow their course. Furthermore, the control dial is of great value in ascertaining spaces as well as localization, and can be used in combination with the ordinary cystoscope.

I have performed three Bottini operations with this new modification, and every little turning of the instrument which otherwise would have escaped me was promptly indicated on the control dial.

Case 1. J. A., aged eighty-one years, suffering for a number of years with frequent and painful micturition, was admitted to Maryland General Hospital January 11, and had at that time acute retention. Withdrew 500 c. c. of urine, which was cloudy and full of pus. The patient's bladder was irrigated with nitrate of silver solution daily for about two weeks until the urine became clear.

Cystoscopic examination revealed enlargement of middle and two lateral lobes of the prostate. On January 26 I made an incision in the median line 3 cm. in length on the right side at an angle of 55°, and another on the left at an angle of 45°. The patient remained in bed three days and then left the hospital. He urinates spontaneously, gets up once a night, and has a residual urine of 50 c. c.

Case 2. J. L., aged sixty-six years, for the past five or six years complained of frequent and painful micturition, which had increased in the past six months to such an extent that the patient

had the desire to urinate every ten minutes, and had to get up during the night about twenty times. He suffered also with the desire to defecate. The straining was so intense that hernia and prolapse of the rectum resulted.

He was admitted to the Maryland General Hospital January 30. His residual urine was 600 c. c. Urine was cloudy and full of pus. Cystoscopic examination revealed an enlarged middle lobe and two lateral lobes enlarged. The Bottini operation was performed on February 11. An incision was made 4 cm. in the median line, one at an angle of 45° on the right side, and another of 60° on the left. The patient was discharged February 21 perfectly cured. He voids his urine regularly without pain, and has no residual urine.

Case 3. W. K., aged sixty years, since November, 1901, suffered from inability to void his urine, and has been using the catheter about three times a day. Came to Baltimore November 11, 1902, suffering with frequent and painful micturition. Has residual urine 400 c. c. Cystoscopic examination revealed greatly-enlarged left lobe, and the right lobe not so prominent. The middle lobe showed a decided bar formation from the right to the left. An incision was made in the median line 4 cm. in length; at the left side a second incision at an angle of 75°, and on the right a third incision at an angle of 40° and 3 cm. in length. Two weeks after the operation patient was able to empty his bladder regularly, and no residual urine was present.

From my own experience with Jacoby's modification of the Bottini incisor I feel justified in concluding that this method is so far superior in all respects to other methods that it should be utilized in all cases, especially in as much as the modification can be attached to other Bottini apparatus.

METHOD OF INSTRUCTION IN SURGICAL PATHOLOGY.

By J. C. Bloodgood, M.D.,

Baltimore.

ABSTRACT OF A PAPER READ BEFORE THE AMERICAN SURGICAL ASSOCIATION IN WASHINGTON, MAY 14, 1903.

CLINICAL instruction in the out-patient department and in the hospital wards has and will always have certain defects and limitations as a complete method of instruction.

The question to be solved is, Can these limitations and defects be removed?

The method of instruction in the surgical pathological laboratory of the Johns Hopkins Hospital has reached a sufficiently satisfactory development to at least justify its presentation as a possible solution of the problem of teaching surgery.

Clinical instruction in the out-patient department and in the wards must to a very large extent be limited to the observation of the patients treated. The usual time spent by a student in the hospital dispensary and wards is two years. During this time many

important surgical diseases are seen not at all or so seldom that the student does not get a clear or lasting clinical picture of the disease. Of necessity examples of the various surgical diseases present themselves in no systematic order, and are so scattered that the student seldom, if ever, can observe in the dispensary, or even in the ward, at the same time the different varieties of affections of a single organ or part. Even in the ward it is very difficult to arrange that the student may follow the patient from his admission through the operation and after-treatment, to present to him the diagnosis confirmed in the pathological laboratory and the result of the treatment when the patient leaves the hospital, and never the ultimate result many years afterwards. Although the time between the admission and discharge of the patient is frequently but an interval of a few weeks, nevertheless it is a very difficult problem to keep all the students in the group familiar with even the important details in the history of each patient.

These limitations and defects can be remedied to a very large extent by the method of instruction in the surgical pathological laboratory. We may describe this method briefly as follows:

The instruction to the third-year medical class in the surgical laboratory is divided into two parts. The first may be called the systematic part, in which the instruction is given by pamphlets, museum specimens, microscopic sections, and illustrations. The second part may be called the routine instruction, which is limited to the fresh material sent to the laboratory from the operating or the autopsy rooms.

First Part.—For the systematic work the third-year student in the beginning of the year comes to the laboratory one afternoon each week. The class is divided into groups of not less than five and not more than ten. Each member of a group is given a pamphlet and a box of microscopic slides stained and labeled. Near each group on a table (a rolling table) are placed the museum specimens discussed in the special pamphlet given to this group. The pamphlet corresponds somewhat to a chapter in a text-book on surgery; for example, tumors and inflammations of the breast, malignant tumors of bone, inflammations and tumors of the thyroid, etc.—*i. e.*, each pamphlet discusses the various affections of a special organ or part. The pamphlet is divided into two parts. In the first part of the pamphlet, for example, inflammations and tumors of the breast, the student is given the number of cases treated during the life of the clinic in relation to the total number of surgical patients. This gives him at once an idea of the relative frequency of the diseases of this organ or part. Then follows a classification of the various diseases, with the number of cases admitted for treatment in the surgical clinic. Here the student learns the relative frequency of the various affections of this organ. When no examples of certain rare affections have come to the clinic for observation, it is so stated. The pamphlet then proceeds to give a summary of the clinical history and picture, treatment, gross pathological appearance, and microscopic study of the various diseases of the organs discussed

in the pamphlet which have been observed in the clinic, and, most important, the ultimate result after leaving the hospital. This general summary corresponds somewhat to what is written in a chapter of a text-book on surgery. It has the advantage, however, similar to that of a monograph, in that it gives the summary of a certain number of specific cases, in each of which the diagnosis has been confirmed by a pathological study and in which the ultimate result is known from a few months to many years. Descriptions of rare diseases not observed in the clinic can be made from the literature, with illustrations. The second part of the pamphlet gives the clinical history, the treatment, the description of the fresh specimen which is preserved in the museum, and which the student can find on the table near the group to which he belongs. Then follows the microscopic description, and the student will find in his box of slides a section taken from the specimen he has just examined.

The general part of the pamphlet the student can read at home in connection with his text-book on surgery. When he comes to the laboratory he is advised to take a museum specimen, selecting the various diseases of the organ in a certain natural sequence. This specimen has a surgical and pathological number which is indexed in the pamphlet, so that the student can quickly turn to the clinical history of this case, and as in the majority of instances some years have elapsed since the patient has left the hospital, the pamphlet is able to give him the ultimate result. Each museum specimen, therefore, is one identified with an individual, the clinical history and ultimate result of whose case the student can read, and he can examine the microscopic section of the museum specimen by which the diagnosis was confirmed. By a careful reading of the pamphlet the student is brought in contact with the relation between the clinical, the gross pathological, and the confirming microscopic diagnosis. In addition, in the pamphlet he will find photographs of the patient illustrating the clinical appearance, diagrams, photographs of the fresh specimen, *x*-ray photographs, if made, and, in some instances, photographs of microscopic drawings, and quite frequently photographs of the ultimate result.

Each group, as stated before, is given a pamphlet and a box of microscopic slides, and near the group are the museum specimens discussed in the pamphlets. From time to time the groups exchange material, so that by the end of the third year a large field of surgery is covered.

I believe this method presents surgery to the student in just as systematic a manner as a didactic lecture, with the great advantage that he reads instead of listens, and with his reading he has object-lessons illustrative of the text. I have found that very little demonstration is necessary. The student works quietly by himself, just as he should in the dissecting-room or chemical laboratory. He is brought in close contact with the disease: with each specimen he can get in a few minutes the entire history of the case and the ultimate result. This is impossible with the patient. While this work

in the laboratory is going on the third-year student observes patients in the out-patient department and in the surgical clinic. When, for example, he sees a patient with the clinical appearance of an exophthalmic goitre, he will have read in his pamphlet a summary of the clinical history, treatment, and ultimate results of all the cases of exophthalmic goitre treated in the hospital up to that time; he will have examined the museum specimens of the thyroids removed and the microscopic sections; he will have seen numerous photographs before and after operation. In the fourth year he will be much better prepared to observe his patients clinically in the wards. When, for example, he sees a case of exophthalmic goitre in the ward, he can go to the library in the hospital and in a few minutes review his third-year instruction on this disease. If during the third and fourth year it is his misfortune to see few or no examples of various important diseases, he will at least in his third year have read the clinical history, seen the photographs, examined the museum and microscopic sections of one or more examples. This systematic method, therefore, prepares the student to take better advantage of the patients he sees clinically in the dispensary and in the wards, and it fills the gaps which cannot be avoided in clinical teaching.

Although such a course is called surgical pathology, its ultimate aim is really clinical diagnosis, taught, however, from the museum specimen and microscopic section instead of the patient. Clinical instruction should and must always be considered the most important part of medical teaching, and the object of this laboratory course is by no means a substitute, but a supplement—its only object to better prepare the student for instruction in the dispensary or at the bedside.

Such a laboratory course has the great advantage that it utilizes the material accumulated during the entire life of the surgical clinic. The student is brought in contact not only with the patients observed during his two years' course of instruction, but with the entire experience of the surgical clinic. This method stimulates better record, more careful descriptions of the fresh tissue removed at operation and autopsy, and their preservation in the museum. It becomes necessary to keep track of the patients treated in the surgical clinic. One is stimulated to get better illustrations. The history of every important case, every museum specimen, microscopic section and photograph, similar to a book in a hospital library, are accessible to the student.

The preparation of the pamphlets is not specially difficult. Once made they can be added to from year to year. The photographs necessary for a set of five to ten pamphlets and the microscopic sections will last for years. The museum specimen is practically indestructible.

In addition to the systematic course just described, the fresh material from the operations and autopsies is used. In the first part of the year each fresh specimen is assigned at once to a third-year student. The probabilities are that he has seen this patient in the

dispensary or in the surgical clinic; in any event he is instructed to make a summary of the clinical history and record the clinical diagnosis. He examines and makes a description of the fresh specimen and makes his own naked-eye diagnosis. In the afternoon, when the entire class meets in the laboratory, those students who have been assigned fresh material meet the instructor in a small room. The cases are discussed and frozen sections are exhibited. After the first of January the class meets on two afternoons in the week. By this time the students have had an opportunity, from the systematic course and from the study of a certain number of fresh specimens, to acquire some familiarity with surgical diseases, and for this reason the demonstration of the fresh material is made before the entire class. The cases are presented by the student to whom the specimen was assigned. By this time the student has been brought in contact with the various surgical diseases from different standpoints. He has studied quite a number systematically in the pamphlets, illustrated by the museum specimen and microscopic section. He has examined personally a number of fresh specimens in conjunction with the clinical history. He has observed a certain number of cases in the surgical dispensary and clinic. For this reason the student can better appreciate now a general demonstration and discussion on the routine fresh material, so that while he is continuing to study by himself the experience of the surgical clinic of the past, he is brought more and more in contact with the material of the present. It is my rule to exhibit those specimens which the student has seen as fresh material again when it has become an alcohol museum specimen, so that he can compare the difference between the fresh and the alcohol specimen. As much as possible the student is informed of the ultimate microscopic diagnosis.

About once a month a lantern-slide demontration is given. The first demonstration, for example, on inflammations and tumors of the thyroid, is given the class after this pamphlet has been studied by each group.

I am quite positive that the time necessary to give such a course is no more than that which would be taken by a course of didactic lectures. The properly-prepared pamphlet is certainly better than any notes of a lecture which can be taken by a student. He can digest what he reads better than what he hears, especially if during his reading object-lessons in the shape of photographs, museum specimens, and microscopic sections are before him. The instructor can confine his talking to the demonstration of fresh specimens, to general remarks on certain more difficult problems, and to a certain amount of personal instruction. The method of teaching is not only more satisfactory to the student, but infinitely more so to the teacher.

Such a course may be difficult to establish, but when once established it can be maintained with a minimum of labor and a maximum of results. The good results are not only to the student, but to the teacher and to the surgical clinic.

Current Literature.

SURGERY.

Under the Supervision of Hugh H. Young, M.D., Baltimore, Assisted by H. A. Fowler, M.D.

THE SURGICAL TREATMENT OF CIRRHOSIS OF THE LIVER, WITH A SUMMARY OF REPORTED CASES. Robert B. Greenough, M.D. *American Journal of the Medical Sciences,* Vol. CXXIV, p. 979.

Greenough remarks that the operation for the treatment of cirrhosis of the liver has now gone beyond the experimental stage, and that an estimate of its value should be possible from the reported cases.

Talma's operation, the suture of the omentum, for the relief of ascites, depends upon the theory that ascites in liver cirrhosis is of mechanical origin. This theory is generally accepted, but some observers hold that the ascites is due to the toxemia produced by the destruction of the liver cells. Thompson and White advance the theory that the ascites may be due to purely accidental coexisting causes, such as peritonitis or perihepatitis. The large number of lymphatic openings on the under surface of the diaphragm would be obliterated by a chronic peritonitis localized in this region, thereby diminishing the normal facilities for the absorption of peritoneal lymph.

In 1891 Terrier performed an entirely different operation for the relief of biliary or Hanot's cirrhosis. This operation, which is generally known as Delagniere's, consists of the drainage of the bile ducts, which is obtained by cholecystostomy and maintenance of a biliary fistula. This operation is based upon the theory that hypertrophic or biliary cirrhosis is due to an infection of the bile passages proceeding from the intestines. Seventeen cases of this operation have been collected from the literature, thirteen of which were relieved.

Greenough has collected from the literature 122 cases of Talma's operation for ascites. In seventeen cases the ascites was due to other causes, and these are excluded from the list. That leaves 105 cases of uncomplicated cases of cirrhosis for analysis. These are considered in detail.

The article is accompanied by a *résumé* of the 122 cases. An extensive bibliography is also added. The following summary is made from an analysis of these cases:

1. The condition known as biliary cirrhosis, with enlarged liver, jaundice and fever, and without ascites, is accompanied in a certain proportion of cases by an infection of the bile ducts. The drainage

of the bile ducts by cholecystostomy is a proper operation for the relief of this condition when evidence of infection is present and symptomatic treatment has failed to effect relief.

2. Of 105 cases of liver cirrhosis which presented the symptoms of ascites, 42 per cent. were improved and 58 per cent. not improved by Talma's operation or one of its modifications. The mortality within thirty days was 29.5 per cent. Nine cases were improved in health two years after the operation.

3. The nine cases of continued relief presented no marked differences from the general character of all the cases.

4. The cases in which the liver was enlarged gave a lower mortality and a higher percentage of improvement than cases of atrophic liver.

5. Cases of suture of the omentum between the layers of the abdominal wall gave a lower mortality and a slightly higher percentage of improvement than cases where only peritoneal surfaces were brought in contact.

6. Drainage increases the danger of septic infection and peritonitis, and is to be avoided. If necessary, tapping may be done after the operation.

7. The presence of adhesions or perihepatitis is of good prognostic import as regards the success of the operation.

8. The number of tappings before operation and the presence of edema of the feet and legs are of less prognostic importance than the general condition of the patient, the size of the liver, and the functional activity of the liver cells.

9. Talma's operation or one of its modifications is of proved benefit in a certain limited number of cases of liver cirrhosis; primarily for the relief of ascites, and secondarily for the relief of other symptoms of portal congestion.

10. The dangers attending the operation are mainly due to the weakened resistance of the patient rather than the operation itself. The selection of cases suitable for operation demands more judgment than has been exercised hitherto.

11. The operation is not indicated in cases of ascites due to causes other than cirrhosis of the liver.

12. The operation is contraindicated in the presence of renal or cardiac disease and when good evidence does not exist that sufficient functional liver tissue remains to maintain life. It is also contraindicated when complications exist sufficient in themselves to make the result of operation uncertain.

* * *

Results of Decapsulation of the Kidney. Harold A. Johnson, M.D., of San Francisco, Cal. *Annals of Surgery*, April, 1903.

Since the publication of Edebohl's results of decapsulation of the kidney in cases of chronic nephritis there have appeared numerous reports of experimental work on various animals showing the effect of decapsulation on the renal and perirenal tissues. Albarran and

Bernard (*La Presse Méd.*, No. 51, 1902), working with rabbits, showed that in these animals decapsulation of the kidney was followed by the formation of a new capsule in fourteen days and was complete in six weeks.

Johnson reports the results of his experiments on dogs. Fifteen dogs were operated on, of which five died. In two cases death was due to hernia through the wound, in one case to leakage of urine into the peritoneal cavity, in one case to the shock from the operation. In the remaining case, in addition to decapsulation of both kidneys, the left renal artery was ligated. Death followed in thirty-six hours.

Johnson's findings may be summarized as follows:

1st. The capsule of the normal kidney consists of the two distinct layers, the outer being much thicker, while the inner is very thin, the direct continuation of the intertubular connective tissue.

2d. In the operation of decapsulation the outer layer only is removed, leaving the inner lacerated, but adherent to the kidney surface.

3d. At first a thin exudate apears on the free surface of the kidney, which, with the remains of the inner layer, gradually becomes a fibrous investment, resembling macroscopically the normal capsule, in that it strips readily, and with the passage of time it becomes more and more firm.

4th. Microscopical examination reveals the fact that it is in some cases thicker and in others thinner than the original, the former generally being true, and that in some instances it varies greatly in thickness in the same specimen.

5th. The structure, at least up to three and one-half months, does not become differentiated into layers, but is one homogeneous mass of fibrous tissue.

6th. Case 1 reveals the fact that it will form under adhesions, and is to be recognized as distinct from them both microscopically and macroscopically.

7th. There is sometimes an infiltration with round cells and a proliferation of the interglobular connective tissue of the cortex, without, however, affecting the glomeruli. The dogs in whom these changes were noted remained perfectly well, as could be shown by their appetite, strength, and playfulness.

8th, and most important, is the fact that in no case was there any considerable anastomosis between the renal and perirenal blood channels. In Case 4, at the same time decapsulation of one kidney was performed the renal artery of the other was ligated. This would presumably call for increased activity in the circulation of the decapsulated kidney. It was all, however, made up by the increased size of the renal artery and vein, and not through a peripheral anastomosis.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

ANTISTREPTOCOCCUS SERUM.

At the meeting of the Society of Clinical Medicine of Berlin on March 16, 1903, Mayer presented the results of his experiments upon the use of antistreptococcus serum. Various investigators have used different methods in treating streptococcus infection. Some have employed sera prepared artificially by injecting streptococci into various animals; others have used the serum obtained from individuals suffering or convalescent from various streptococcus infections and scarlet fever, Mayer including the last disease among the streptococcus infections.

Marmorek was the first who made such a serum, immunizing horses with streptococci obtained from scarlet-fever patients, and with the serum of the animal treating persons affected with the disease. Thirty-nine successful cases have been reported in the literature treated with Marmorek serum.

Tavel, in immunizing his horses, used many races of streptococci obtained from numerous cases among human beings, and did not depend upon the streptococci obtained from one special case alone.

Aronsohn obtained his serum from horses which had been immunized with different breeds of streptococci obtained from scarlet-fever patients, and Baginsky has used this serum successfully upon human beings.

Moser also followed the Tavel principle with a slight modification, and reports success from this mode of treatment.

Mayer has treated eighteen cases of erysipelas, scarlet fever, sepsis, and angina with Aronsohn's serum. His results he divides into three groups—1st, cases with favorable effect; 2d, cases with doubtful success; 3d, cases with no success. Five cases were in the 1st group, including two of facial erysipelas, one of puerperal sepsis, one of angina, in all of which a marked fall of temperature and general improvement of symptoms followed the administration of the serum. The second group contained two cases—one of erysipelas, in which the reaction was favorable at first, but in which a secondary rise of temperature took place, and a case of puerperal sepsis, in which the only effect of the serum was to cause the patient admit that she felt better. In the third group, that is, where the use of the serum was devoid of success, there were twelve cases—four of erysipelas, six of sepsis, and two of complications of scarlet fever. In all the cases, however, no ill effects followed the injection.

In conjunction with Michaelis, Mayer performed a number of experiments on the various antistreptococcus sera to test their protective and curative properties. As regards the former, he found that the Marmorek serum was useless, the Tavel serum almost useless, while the Aronsohn serum was protective without exception.

As regards the curative effect of the sera, this was never seen in the case of the Marmorek and Tavel sera, but was found in the majority of cases treated with the Aronsohn serum. It is very important that the serum should be used soon after the infection, and they found that small doses injected early were much more efficacious than large doses injected late. The serum of two men who had just recovered from erysipelas was tried and found to have a distinct protective influence, but only in large doses.

* * *

THE SIGNIFICANCE OF LEUCOCYTOSIS.

Willson (*Journal of the American Medical Association,* May 2, 1903), in an interesting article, discusses the meaning and significance of leucocytosis. In the first place, Willson differs somewhat from Cabot in his original definition of leucocytosis, especially in two respects—first, leucocytosis does not necessarily imply an increase in the total number of leucocytes, even in the presence of an active inflammatory influence, and a relatively high percentage of polymorphonuclear cells, even though the leucocytes be normal in number, is very significant; second, in certain cases, notwithstanding the presence of inflammatory causes in the body, other and more potent specific influences in certain cases may cause the percentage of polymorphonuclear leucocytes not only not to be increased, but even to be increased.

Thus Willson uses the term relative and absolute in regard to leucocytosis, the former implying that the percentage of polymorphonuclear forms is in marked excess of the normal percentage, the latter implying an increase in the total number of leucocytes, irrespective of the percentages of the various forms.

Willson reports a number of most interesting cases in which a relative leucocytosis showed that inflammation was present—one, a case of glandular abscess, with 7600 leucocytes per c. mm., of which 94 per cent. were polymorphonuclear cells; one, a case of ovarian abscess, with 9200 leucocytes and 92 per cent. polymorphonuclear cells.

The conclusions which Willson reaches are as follows:

1. The term leucocytosis must include every increase in the absolute number of leucocytes of the blood examined, as well as every increase in the percentage counts of various leucocytic forms.

2. A leucocytosis of whatever nature must always be regarded as a clinical sign of importance, but never of such weight as to influence against equally convincing physical signs.

3. A high percentage of the polymorphonuclear forms in the absence of an absolute leucocytosis indicates the presence either of pus or of some grave inflammatory process, together with a low vitality of the patient.

4. Specific factors may rarely exert such an unusual influence as to interfere with the customary reaction of the polymorphonuclear cells. At least one instance has been noted in which the total number of leucocytes was increased, at the same time with a marked

reduction in the number of polymorphonuclear forms. This condition is probably seldom encountered.

5. Single counts of the leucocytes or single estimations of the leucocytic percentages are often misleading, while a persistent series of observations will seldom fail to aid in the diagnosis and treatment of the condition.

6. A gradual but steady rise in the total sum of leucocytes above the ordinary number usually indicates the presence of an active augmenting inflammatory influence. When this increase reaches large proportions it may be looked on as an indication of the presence of an active inflammatory process (purulent effusion, localized pus collection, pneumonic exudate, etc.), provided the clinical picture also bears out the suggestion.

* * *

THE SUBCUTANEOUS ADMINISTRATION OF ARSENIC.

Within the last few years considerable work has been done on the subcutaneous application of arsenic in the hope that by this means less unpleasant symptoms, especially on the part of the stomach and intestines, would follow, in the first place, and, in the second place, that larger doses of the drug could be administered by this method than by the mouth. The various cacodylate preparations have been extensively used in France both in the treatment of anemias of various kinds, primary and secondary, and of various skin diseases, notably psoriasis, while in Germany an organic preparation of arsenic, known as atoxyl, has been used in the same conditions, the method of administration of the latter drug being by gradually increasing doses.

Koebner was the first to make use of the subcutaneous method of administering arsenic, and he recommended it highly in the treatment of appropriate diseases, although he did not make use of any of the organic preparations of arsenic, but used the arsenite of soda. In fact, it is perfectly possible to use the inorganic salts of arsenic subcutaneously. Ziemssen made use of the following solution for this purpose:

One gramme of arsenious acid is boiled with 5 c. c. of normal sodium hydrate until it is completely dissolved. The fluid is then diluted to 100 c. c. and filtered; it is then poured into small bottles or tubes holding 2 c. c., and after being plugged with cotton wool these are sterilized by steam. This solution when injected into the muscles is not irritant as the pure sodium arsenite is, and infection, of course, may not be feared if the sterilization has been performed carefully.

Jasionek (*Münch. med. Woch.*, July 29, 1902) uses this solution, beginning with half a cubic centimeter, and rapidly increasing the dose to 1 c. c., giving in most cases the injection every other day, in a few cases daily. He recommends the method highly, has met with but few ill effects, and found that he could get better results with smaller doses by this method than by the use of arsenic by mouth.

SHOCK PRODUCED BY GENERAL ANESTHESIA.

Turck (*Journal of the American Medical Association*, May 2, 1903), discusses the question of shock after general anesthesia, especially in regard to disturbances of the blood and the gastro-intestinal tract. The experiments were tried upon dogs, and chloroform and ether were used, either separately or combined. The animal's temperature, pulse, and respiration were observed before, during, and after the anesthesia. The maximum blood-pressure was determined and the changes in the blood serum noted. The condition of the motility of the stomach and intestines was observed and a study of excretion and secretion made. When death occurred a post-mortem examination was made. The length of time of the anesthesia ranged from one to six hours. Turck's paper deals with the consideration of the anesthetic as a cellular poison, the disturbances of function as a result of the anesthesia, and the toxins that are evolved either from the direct effect of the anesthetic or the disturbances of certain functions of the body, and as a result of his experiments, which are given in detail, the following summary of his work may be deduced:

1. The complex clinical picture of the after-effects of chloroform or ether anesthesia is made more clear by experimental research. The circulatory disturbance is a direct result of the chloroform or ether acting on the vasomotor centers.

2. The prolonged effect of chloroform and ether on the splanchnic circulation results in congestion, associated with fall in temperature. Temperature may fall without fall in blood-pressure.

3. The direct effects of the toxins of chloroform and ether acting on cells, with disturbance of metabolism, may produce toxic products.

4. The resulting elaboration of toxins produces symptoms of "autointoxication," associated with the formation of hemolytic and agglutinating bodies, and precipitins.

5. Indirect toxic effects result from retention of toxic products through disturbances of elimination.

6. There is lessened resistance of the blood serum to bacterial toxins.

7. There is diminished resistance to development of saprophytic and pathogenic micro-organisms.

8. There is a lessened resistance of blood serum to normal secreted toxins.

9. This may be partly explained by the changes observed in the sera, such as diminished antiferment properties, hemolysis, agglutination, precipitins, etc.

10. That reflex effects result, such as reflex irritation, and these set up excretion of the anesthetic into the stomach and intestines.

11. As the result of atony there is the formation of toxins in the stomach and intestines through bacterial growth.

12. Atony of the stomach and intestines results in the accumulation of gases and interference with the circulation.

13. There is increased toxicity of the stomach contents in the presence of chloroform and ether.

* * *

THE BACTERIOLOGY OF ACUTE ARTICULAR RHEUMATISM.

Meyer (*Zeitschrift f. klin. Med.,* Vol. LX, p. 311) gives the results of his observations of twenty-five cases of typical acute polyarthritis with angina and one case of ulcerated endocarditis, in which the blood and the contents of the various joints were examined with the greatest care bacteriologically by culture upon the various media. In most cases the results of these experiments were negative, and Meyer therefore made cultures from the exudate on the surface of the tonsils upon peptone bouillon or ascitic fluid bouillon. After twenty-four hours these cultures were injected into the ear vein of rabbits. The bacteria which were isolated by these means consisted almost entirely of small diplococci, which almost always in fluid media grew together in short chains, while their culture peculiarities corresponded in the main with those of the streptococci. They were very slightly pathogenic for animals, nor could their virulence be increased by passing them through the bodies of animals. After intravenous injections into rabbits, swelling in the joints of the knee and of the shoulder and verrucose endocarditis occurred, the latter 21 times in 100 animals. From the exudate from the affected joint the micro-organism could be isolated. In three cases slight choreiform attacks followed. Since his results were constant and harmonious, Meyer believes that his diplococcus may be a cause of acute polyarthritis.

REVIEW IN PEDIATRICS.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

INTRAVENOUS ADMINISTRATION OF ANTIDIPHTHERITIC SERUM. D. R. Cairns. *Lancet,* December 20, 1902; *Pediatrics,* February, 1903.

The treatment of diphtheria by the injection of serum has passed its experimental stage. The method has usually been a subcutaneous injection. Intravenous injection of the serum is comparatively new, and the points in its favor are argued in the following terms:

The marked reduction in the case mortality in diphtheria effected by the introduction of the diphtheretic antitoxin is admitted by everyone, but, great as this reduction has been, the experience gained in the treatment of this disease in the Glasgow Fever Hospital suggests that even a further fall in the case mortality may be hoped for. The lines along which this improvement may be effected are twofold—(1) by the exhibition of larger doses than those commonly recommended, and (2) in certain cases by the intravenous use of the remedy. The employment of large doses of

serum has already been advocated by several observerse, but so far no one has recommended the intravenous use of the remedy. In a paper dealing with the serum treatment of bubonic plague the author has advocated the intravenous use of Yersin's serum as a most useful adjunct to the subcutaneous injection of the remedy, and the encouraging results obtained in apparently hopeless cases of this disease suggested the employment of the same method of administration in the treatment of severe diphtheria.

Both diseases are due to the reception at a particular part of the body of a specific micro-organism which must be considered as the essential cause of the lesion, while the general symptoms of the disease are brought about by the absorption into the system of a definite chemical poison which is formed by the life-processes of the organism at the seat of inoculation. In plague the subcutaneous injections of Yersin's serum is followed not only by a marked antitoxic effect, as evidenced by improvement in symptoms, but when introduced into the lymphatic drain toward the bubo a directly bactericidal effect can be demonstrated, the organisms contained in the bubo showing evidences of degeneration very soon after the administration of the serum. When given subcutaneously, however, even in large doses, the effect of the serum seems to be chiefly a local one, degeneration appearing only in those organisms which lie within the area of injection. By the intravenous method the maximum influence of the serum on the tissues and also on the organisms is obtained with greater rapidity than when the serum is used subcutaneously, and those bacilli which have overflowed from the primary focus of injection into the circulation can be reached directly, and similar degenerative changes be produced, while at the same time the circulating toxin is most effectively dealt with. The fact that the administration of even large doses of serum subcutaneously is not followed by a commensurate improvement suggests that the serum in its passage through the lymphatic vessels and glands undergoes a qualitative change whereby its power of neutralizing toxin is considerably diminished. This may be due to (1) a selective action exercised by the lymphatic glands in filtering out the active constituent of the serum, or (2) to the fact that, as Ehrlich has shown, there are a definite chemical action and reaction between toxin and antitoxin, neutralization going on more quickly and more effectively in concentrated solutions than in diluted ones. In the case of plague the local action of the subcutaneous injection of serum is probably directed in the first place to the neutralization of the toxin locally present in the bubo and its vicinity, and also to inducing bacillary degeneration in the comparatively large number of organisms present in the primary lesion. Any surplus of antitoxic bodies which reaches the general circulation after passing through the lymphatic channels will probably be present in the blood in such a state of dilution as to be comparatively ineffective, especially in septicemic cases of plague. By immediate introduction of the serum into the general circulation, however, those bacilli

which have found their way to the deeper organs may be destroyed and the circulating toxin neutralized by the comparatively concentrated solution of antitoxin.

* * *

A Case of Cured Tuberculous Meningitis. Barth. *Münch. med. Woch.*, 1902, p. 887.

Considering the fatality of tuberculous meningitis, the case reported by Barth is of interest. The patient, a female, aged two and three-quarters years, with no hereditary history, following an attack of measles, was seized with severe headache, vomiting and diarrhea, and high temperature. The child continued in this condition for a week, when there was noted dilatation of the pupils, stupor, some stiffness in the cervical muscles, and the presence of Kernig's sign. The abdomen was not retracted, and the lungs and abdominal organs were normal. Urine contained neither sugar nor albumen. Diazo negative.

The diagnosis of meningitis being made, a lumbar puncture was made, and tubercle bacilli were found in the fluid. Iodide of potassium was prescribed internally and wet cups to the mastoid regions. This caused a decided improvement in the general condition, and the headache ceased completely. The duration of the illness was about six months, ending in complete recovery.

* * *

The Nature and Treatment of Recurrent Vomiting in Children. David L. Edsall. *American Journal of the Medical Sciences*, April, 1903.

The nature of the disorder which various authors have called recurrent, periodical or cyclic vomiting has never been demonstrated, and the treatment has been correspondingly ineffectual. The commonest theories as to its causation are that it is a neurosis, or that it is due to the so-called gouty or uric-acid diathesis.

The author's observations on the cases reported convince him that at the time of the attacks, but not in the intervals, a severe acid intoxication of the type seen in diabetes mellitus was invariably present. Treatment directed towards this intoxication was generally successful. These facts indicate that a cryptogenic-acid intoxication is probably in many cases an important element in producing the exhausting and occasionally fatal vomiting. It is highly probable, however, that this recurrent vomiting is not always due to the same primary disorder.

By cryptogenic intoxication is meant that form of acid intoxication which is present when recognizable organic disease capable of producing same is absent. The importance of acid intoxication is seen in diabetes mellitus, carcinoma, and gastro-intestinal diseases.

The symptoms resulting from acid intoxication may be varied—coma, presence of odor of acetone in the breath, and particularly the presence of acetone and diacetic acid in the urine. It was once thought that acetone produces the symptoms through its specific

toxic effects. It is now believed, on the basis of clinical observation and animal experimentation, that no specific toxic agent is at work, but that the symptoms are due merely to the presence of an excessive amount of acids, and are produced by the reduction of the alkalinity of the tissues and of the body fluids and the loss of alkalies in the excretions, the acid carrying the alkalies off in combination with them. The rational treatment of the condition is, therefore, to administer alkalies in extremely large doses, in order to neutralize artificially the excess of acids present.

The author mentions one case of his own and five others which have come under his observation in which acetone and diacetic acid were found in the urine at the beginning of the attack. In his own case he observed a few hours after the onset of the vomiting a marked odor of acetone about the child, although he was unable to secure urine for examination.

In the case of Pierson's, acetone and diacetic acid were found to appear with the prodromal symptoms of each attack and disappear as the attack subsided.

The author recommends the use of large doses of bicarbonate of soda whenever prodramal symptoms appear. When given before the attack has appeared, for the most part attacks have been prevented; if given after the vomiting has set in, the attack has been cut short by several days. Since other treatment has been extremely unsatisfactory, it seems to be well worth while to try the effect of large doses of alkali, even if acetone and diacetic acid are not known to be present, but particularly if they are found..

The cause of this acid intoxication can only be suspected, as we do not know the cause of acid intoxication in any condition. It is probable that *acidosis* is of two varieties—one that is primarily due to disturbance of metabolism, another that is primarily due to disturbances of digestion. The cases of recurrent vomiting probably belong to the latter class.

Marfan (*Archiv de Méd. des Enfants,* 1901) describes a disorder that is probably identical with the recurrent vomiting of American authors. He states that he has regularly found acetone in the urine in the beginning of these attacks. He, however, attributes the condition to "acetonemia." He doubts the correctness of the modern view that acetonuria indicates acid intoxication, considering that the meaning of acetonuria is wholly in doubt.

* * *

The Malignancy of Joint Tuberculosis; Illustrated by a Series of Forty-Seven Cases. Painter. *Boston Medical and Surgical Journal,* January 8, 1903.

Painter, from his study of the subject, reaches the following conclusions: Tuberculous disease tends to recur after apparent cure in a considerable proportion of cases. This recurrence is most commonly a local one. Metastases are not common. Trauma, direct or indirect, is frequently associated with the recurrence. Indirect trauma is probably the exciting cause of the recurrences, especi-

ally when partial ankylosis or deformity exists. Patients who have suffered from bone and joint tuberculosis should be cautioned that they are not well when symptoms have ceased, and that reasonable care must be exercised to avoid recrudescences. Deformity and shortening should be corrected as far and as accurately as possible. Mechanical treatment, especially fixation, should be used in the acute conditions of childhood. Exploratory interference, where discretion is used, with the view to removal of isolated foci, is advisable in many cases in children, and is to be urged in the majority of recrudescences if seen early.

* * *

Empyema: A Contribution to Its Bacteriology. Bythell. *Pediatrics,* April, 1903.

Forty successive cases of empyema in children were examined bacteriologically, with the following results: Streptococcus alone, two cases (5 per cent.); streptococcus and staphylococcus, one; streptococcus and pneumococcus, one; pneumococcus alone, twenty-six (65 per cent.); other mixed pneumococcic cases, nine (22.5 per cent.), and Friedlander's bacillus and staphylococcus, one. The writer's conclusions are as follows:

1. Empyema is common in children of all ages, and is decidedly more frequent in boys than in girls. The disease resembles pneumonia, in being more prevalent in spring and early summer.

2. The pleura is infected in the great majority of cases by a process of direct invasion from a pulmonary lesion. The latter is usually a catarrhal pneumonia in children. In many cases which are apparently "primary" the source of infection is probably also an undiscovered patch of broncho-pneumonia.

3. The micro-organism, which is by far the most frequently present in the empyema of children, is the pneumococcus.

4. The clinical results of empyema depend to some extent upon the species of bacteria found within the pleura, the pneumococcic cases being, on the whole, the mildest. This micro-organism may, however, give rise to very serious complications either by the direct invasion of surrounding viscera or by metastatic infection.

5. The bacteriological examination of the pus gives other indications as to the clinical prognosis, which appear to be of considerable value—(a) a small number of poorly-stained micro-organisms which give feeble cultures usually denote a good prognosis; (b) the reverse condition is not so frequently accompanied by severe clinical symptoms, especially when phagocytosis is well marked; (c) vigorous cultures are not in themselves a reliable sign of pathogenic activity.

6. The bronchial nodes are probably invaded by micro-organisms from the pleural cavity in every case of empyema. The organisms are sometimes also found after death in the mesenteric nodes.

7. With the exception of those cases in which there are tuberculous lesions of the pleura or lung the best results may be expected from the resection of a rib, with free drainage of the pleural cavity.

Book Reviews.

A Manual of Medical Jurisprudence, Insanity, and Toxicology. By Henry C. Chapman, M.D. Philadelphia and London: W. B. Saunders & Co. 1903.

This is the third edition of this book, and is thoroughly revised. It contains 64 illustrations.

It is in every way a useful book for the student and teacher of medical jurisprudence. In our medical schools today this subject is, fortunately, receiving more attention than it did in former years, and everyone who has spent any time in its study must be immediately interested in it. Notwithstanding the more careful teaching of jurisprudence, one still sees too frequently careless methods employed by many coroners in making post-mortem examinations, and even in our medical schools the manner of conducting an autopsy is often very crude.

The description of the various instruments and methods of conducting post-mortems are given by the author, and the chapters on the medico-legal relationship between the coroner, physician, and the State are clear and of great value.

The various methods for the detection of rape are fully explained, as are also the very important chemical tests with which the coroner should be familiar. The variations in the size and weight of the various organs in health and disease are considered, and the methods employed for detecting the course of a bullet or the direction from whence it came, for the detection of infanticide, and of death by drowning, or of death previously induced.

The illustrations are very good and in every way instructive. For the moderate price at which the book is sold the publishers have furnished the student with a valuable work. R. R.

Morphinism and Narcomania from Other Drugs. By T. B. Crothers, M.D., Superintendent Walnut Lodge Hospital, Hartford, Conn. Philadelphia and London: W. B. Saunders & Co. 1902.

This book fills a long-felt want in medical literature, for unless we include the articles on drug inebriety scattered through various journals and pamphlets we are, as far as the English and American literature is concerned, without a complete and practical work on the modern methods employed in the cure of the various drug habits.

The book should be consulted by all those interested in matters neurological, and the general practitioner would obtain much of value from its pages. As the author points out, the opium mania is a very old disorder, but its increase during recent years is very evident. Other narcotic drugs besides opium are also used to an alarming extent, and since the various coal-tar products have furnished the medical world with an almost infinite variety of such drugs, they are more readily obtained by the general public, first, because we are learning more about the use of such remedies; secondly, because the cost of such remedies is constantly being reduced. Indeed, it would

not be at all surprising if morphia should soon be made synthetically, so that its cost might also be reduced.

Crothers refers to the essay of John Leigh in 1786 as the first important work on the subject of the opium habit. This book was entitled "Opium and Its Effects." It was dedicated to George Washington, so that many copies were sent from England to this country.

To show the large amount of morphia consumed in the present day the author cites the example of a small drug store in a New York village selling forty ounces in a single month. In a study of 3244 physicians in this country, 10 per cent. were estimated as either secret or open users of the drug.

As to the portion of the book devoted to the treatment of the opium habit, the author naturally favors the hospital treatment, but he also very rightly warns against various quack methods and institutions so widely advertised in this country. He mentions the following three plans of treatment:

1st. Immediate withdrawal of all morphia.

2d. Rapid withdrawal, with, say, two to three grains a day for two to three days.

3d. Gradual withdrawal, with, say, from six to eight grains per diem in cases who have taken from twenty to thirty grains per day.

Of these methods it is evident the author favors the last named as most safe and most humane. Naturally, he includes the use of a great many other measures necessary to relieve the patient's discomfort, such as frequent hot baths, light massage, electricity, various narcotics to replace the morphia for a time, the careful treatment of the stomach symptoms that are certain to arise, and the severe diarrhea which often occurs. The use of hyoscine hypobromate has been especially advised recently, and seems to give excellent results.

The author warns against dismissing the patient until all craving for the drug, and especially for alcohol, has disappeared, so that most cases require several weeks or months for the cure.

The book further treats of the medico-legal aspect of the drug habit.

The work is in every way complete, comprising in all 344 pages, with a full index. R. R.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Volume I, March, 1903. Philadelphia and New York: Lea Bros. & Co. 1903.

This first volume of the new series is in six parts. The first is by Charles H. Frazier, who reviews recent progress in the surgery of the head, neck, and chest in a very interesting article of 120 pages.

James B. Herrick furnishes an excellent article on infectious diseases, including acute rheumatism, croupous pneumonia, and influenza. The recent literature of dysentery, malaria, tetanus, and typhoid fever is found in this chapter.

There is a good review of the literature of diseases of children by Floyd M. Crandall.

Ludwig Hektoen contributes the chapter on pathology. The first forty pages of this chapter give a very interesting and intelligible review of recent studies in immunity.

Two shorter articles bring the volume to a close—one by A. Logan Turner on laryngology and rhinology, and a review in otology by Robert L. Randolph.

This quarterly has come into high favor as a digest of whatever in recent literature has practical value, and the new series starts off quite as well as its predecessors.

The Care of the Baby. A Manual for Mothers and Nurses, containing Practical Directions for the Management of Infancy and Childhood in Health and Disease. By J. P. Crozer Griffith, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Physician to the Children's Hospital, Philadelphia. Third edition, thoroughly revised. Handsome 12mo volume of 436 pages, fully illustrated. Cloth, $1.50 net. Philadelphia, New York, and London: W. B. Saunders & Co. 1903.

The continued success of this manual renders a third edition necessary. The book has been thoroughly revised and brought up-to-date in every particular. The work is primarily intended as a guide for young mothers, but the trained nurse as well as the physician will find much of value in it. The minutiae of "Babydom" are often overlooked by even experienced physicians, and the details of handling the healthy baby are often neglected in a course instruction to medical students.

"Before Baby Comes," "The Baby's Growth," "The Baby's Toilet," "Baby's Clothes," "Feeding the Baby," "Sleep," "Physical, Mental, and Moral Training" are discussed by Griffith in a manner readily understood by the laity.

The chapter on the "Sick Baby" is not intended to supplant the physician, but is useful to mothers in emergency, and may save the tired doctor a midnight call to ease baby's colic.

The reviewer has placed the book in the hands of a number of young mothers, and has always been pleased with the results accomplished. H.

The Practice of Medicine by Eminent Medical Specialists and Authorities. Edited by George Alexander Gibson, Physician to the Royal Infirmary, Edinburgh. Two volumes. Philadelphia: J. B. Lippincott Co.; Edinburgh and London: Young J. Pentland. 1901.

Some of the greatest authorities in their specialties in Great Britain, Scotland, and Ireland are to be found among the list of contributors to this work, and the result is a book well written and thoroughly up-to-date in many of the chapters, and very useful, although lacking in the general finish and completeness which are only found when one author alone is responsible for the whole work. In many of the articles the chapter on treatment demonstrates how far behind their continental and American brethren are the English therapeutists. B.

MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

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BALTIMORE, JUNE, 1903

THE PARASITE OF SMALLPOX.

AMONG the papers presented at the recent meeting of the Congress of American Physicians and Surgeons that of W. T. Councilman had been looked forward to with liveliest interest. Dr. Councilman's communication was made on Wednesday, May 14, to the Association of American Pathologists and Bacteriologists, meeting in the laboratory on the fifth floor of Columbian University, Washington, D. C. The room was no doubt well suited for the ordinary uses of the association, but when the time for Dr. Councilman's paper arrived the inconvenience of the laboratory furniture became painfully apparent. It had evidently been agreed that Dr. Councilman should not be called upon until the other affiliated societies had adjourned. The papers of Drs. McGrath, Brinkerhoff, Thompson, and Tyzzer, all relating to variola and all based on the recent studies of the subject made at Harvard Medical School, were all disposed of, and then when expectation was most acute an unlisted paper by another of Dr. Councilman's associates was interpolated. While this was being read the room gradually filled. Next a distinguished physiological chemist was called upon, and gave without preparation a talk upon enzymes and antienzymes. Meanwhile the room became uncomfortably full. The chairman touched his desk with the gavel. The speaker dropped his subject abruptly and congratulated the audience that the anticipated moment had arrived.

Dr. Councilman first gave a brief *résumé* of earlier studies upon the variously-interpreted cell-inclusions of variola and vaccinia by Pfeiffer, Guarnieri, Funck, Wassilewski, and others, and then reported his own observations, illustrated by drawings and lantern slides, leading to the conclusion that these intracellular bodies represent part of the life-cycle of a sporozoon, which is the cause of smallpox. Two distinct phases were described by Dr. Councilman, the first occurring in vaccinia and in the inoculated cornea of the rabbits, a simple or asexual life-cycle, and the second occurring in human smallpox and the experimental variola of apes, culminating in the rupture of

spore cysts and the liberation of what are believed to be sexual elements. The organism has not been propagated in artificial media, but it has been found possible to exclude bacteria from variolous matter by hostile culture media, and with the bacteria-free material to produce and reproduce the life-cycle of the parasite in the rabbit's cornea and in the ape.

Great weight is added to Dr. Councilman's conclusions by the statement of Professor Calkins of Columbia University that "there is absolutely no doubt that we have to do in the process with an organism which belongs to the protozoa."

The heat of the room, the lateness of the hour, and the evident discomfort of those who were obliged to stand rather discouraged free discussion of Dr. Councilman's paper. Dr. Welch was called upon immediately after Dr. Councilman sat down, and his remarks were received with the closest interest. Though admitting, as Dr. Councilman had done, that these studies did not fully demonstrate the life-history of the parasite, nor finally establish its etiological relationship to smallpox, Dr. Welch accepted the body of evidence submitted by Dr. Councilman as satisfactory proof that the living cause of smallpox has at last been recognized.

Dr. Ewing of Cornell, whose careful studies had led him to believe that the cell-inclusions found in smallpox were not etiologically related to the disease, expressed himself as almost, but not quite, convinced that Dr. Councilman's views were right. His criticisms, which appeared to be sound, gave one a lively sense of the importance of a vigorous prosecution of these studies to final completeness.

THE RELATIVE IMMUNITY OF OFFENDERS.

The *Lancet* of March tells a story of one Karl Frederick Kramer, who imported saccharin in a loose compound with anilin under the name of anilin sulphate. In this way he evaded the duties for about a year. He was convicted, however, and his penalty amounted to £9300 sterling.

Contrasted with this account of an expensive trick is another of a farmer who sent to market the carcasses of two pigs which were diseased and unfit for human food, and for this crime was caused to forfeit and pay to the State the sum of £24. "It is evident," says our British contemporary, "that the heinousness of an offense is not represented by the amount of a fine, for surely a fraud calculated to injure health is of a worse description than a fraud which cheats the excise."

American practice can easily furnish more glaring instances of disproportionate penalties, as two Maryland instances will show. Until 1902 there was no law in Maryland to punish the possession or preparation of diseased ani-

mals or meat for sale as human food. The only penalty was the confiscation of such diseased animals or meats as fell under official observation. The legislature of 1902 provided an additional penalty for offenses of this class. A few months after the passage of this law two "cow punchers" combined their capital to buy a sick cow from a dairyman living just beyond the western limit of Baltimore city. The cow was put into a wagon and hauled to a large public abattoir in Baltimore city, where the ritual of slaughter was performed. The two speculators were arrested and tried at Southwestern Police Station. The cases were heard, and conviction was had within fifteen minutes. Each of the men was assessed a fine of $50. Neither of these petty criminals had ever come under official notice before.

A certain firm operating a large store in Baltimore city, claiming to do business to the amount of more than $1,000,000 a year, had come repeatedly under official observation, and belonged definitely to the class of offenders for whose punishment the law of 1902 was passed. This firm bought by its senior member a small lot of hogs, among them one having a disease of an obvious and disgusting nature, and another having a disease which was not apparent until after slaughter. The animals were slaughtered and stored with the other meat belonging to the firm. At the trial there was testimony that the unfitness of the animals for human food was noted by the butchers, and that their condition was reported by the butchers to the foreman of the firm.

Separate indictments were found against the foreman and his principal, but no conviction resulted. The evidence, it appears, failed to fix guilty knowledge. It is certainly very difficult to prove that an intelligent man knows when an animal or a piece of meat is unfit to be eaten; more difficult, apparently, than to prove such knowledge in the case of an ignorant person of no reputation.

MOSQUITO CULTURE.

According to the daily papers certain New Jersey towns which conducted campaigns against the mosquitoes of 1902 report that the early arrivals of 1903 are mosquitoes of great size, improved song, and exalted venom. What they have lost in numbers has been more than made up in individual energy. The survivors of last season's campaign are the fittest mosquitoes ever seen. There is danger in every interference with the distribution of plants and animals. A tropical island free from snakes became infested with rats. It was attempted to solve the rat problem by introducing snakes. The rats became arboreal, and the land had a pest of snakes. To combat the snakes the mongoose was introduced, and presently the island was overrun with whatever is the plural of mongoose.

Essential data are missing from the newspaper reports on the Jersey mosquito. We need a faithful portrait drawn to scale by an expert cartoonist.

Medical Items.

INCREASE IN THE MEDICAL CORPS OF THE NAVY.

The Fifty-seventh Congress in its last session provided for an increase of 150 numbers in the Medical Corps of the Navy, twenty-five of which are to be appointed each calendar year for six years. By the enactment of this law there is afforded to the young physicians of the country an opportunity to take service in the navy of the United States and an assurance of the continuance of this opportunity for the next six years. The number of vacancies in this corps occurring from retirements, resignations, and casualties average about ten a year, which, added to the twenty-five created by new legislation, makes thirty-five appointments open to ambitious young medical men yearly.

These appointments are to be made in the grade of assistant surgeon, and are within the reach of any well-qualified physician between the ages of twenty-one and thirty who is a citizen of the United States. Examinations to determine the fitness of candidates for appointment are held in Washington, D. C., and at Mare Island, Cal., and the boards of examiners are in continuous session throughout the year. It is only necessary for any physician of the required age and citizenship desiring to enter the Medical Corps of the Navy to apply to the Secretary of the Navy for permission to be examined to insure being given an opportunity. No political or other influence is required, and the only testimonials needed are those bearing on moral standing and citizenship.

The examinations to determine the fitness of candidates for these appointments are conducted in the following order: 1, physical; 2, professional; 3, collateral.

The physical examination is thorough, and the candidate is required to certify, on oath, that he is free from all mental, physical, and constitutional defects. Acuteness of vision 12/20 for each eye unaided by glasses, but capable of correction by aid of lenses to 20/20, is obligatory. Color perception must be normal, and the teeth good. If the candidate is found to be physically disqualified, his examination is concluded. If found to be physically qualified, his examination is continued, as follows:

(1) Letter to the board describing in detail his general and professional education.

Bandaging; tourniquets; four operations on cadaver; clinical cases (a written report being made in one case, giving history, diagnosis, prognosis, treatment, one prescription, at least, being written out in full in Latin); urinalysis (chemical and microscopical examination of one specimen of urine); practical microscopy, and recognition of five mounted specimens (histological, pathological, and bacteriological); recognition of surgical instruments.

PROFESSIONAL EXAMINATION.

	Written questions.	Percentages required.
Anatomy (2) and physiology (1)	3	80
Surgery	3	85
Medicine	3	85
Pathology (1) and microscopy (1)	2	60
Obstetrics (1) and medical jurisprudence (1)	2	60
Materia medica and physiological action of drugs	2	80
Chemistry (2) and physics (1)	3	60
Hygiene (1) and quarantine (1)	2	80
General aptitude	.....	80
Literary and scientific branches	.....	80
Required aggregate	.....	750

ORAL EXAMINATION.

This follows the written work in each branch, and the required percentage is made up from the combined results of the written and the oral examinations.

The percentages given are not absolute, however, as losses in some branches may be made good in others, provided the standard is reached in the cardinal subjects of anatomy, physiology, medicine, and surgery.

COLLATERAL EXAMINATION.

This embraces spelling, punctuation, the use of capital letters, grammar, arithmetic, geogra-

phy (descriptive and physical), languages, history, general literature, elementary botany, geology, and zoology. While due credit is given for a knowledge of languages and the sciences, it is not essential except in the case of physics. A knowledge of the common-school branches is essential, and deficiency in this respect will cause rejection, even though passing marks may be gained in professional subjects.

These examinations, while necessarily thorough and comprehensive, are simple and practical, and are not beyond the attainments of any well-educated physician. The oral and written questions are similar to those asked by the best medical colleges in examination for graduation.

The future prospects of the medical officer of the navy, both for promotion and professional opportunity, are very bright, and the plan of enlargement of the naval establishment already adopted and authorized, as well as that in contemplation, gives assurance that this outlook will grow even more promising.

The Medical Corps of the Navy consists today of the following numbers and grades: One surgeon-general with the rank of admiral (equivalent to brigadier-general in the army); fifteen medical directors with the rank of captain (equivalent to colonel in the army); fifteen medical inspectors with the rank of commander (equivalent to lieutenant-colonel in the army); eighty-five surgeons with the rank of lieutenant-commander (equivalent to major in the army); twenty-three passed assistant surgeons with the rank of lieutenant (equivalent to captain in the army); fifty-six assistant surgeons with the rank of lieutenant, junior grade (equivalent to first lieutenant in the army), with 152 vacancies. There are twenty-seven vacancies in the grade of assistant surgeon for the year 1903.

Assistant surgeons, after three years' service as such, will be eligible for promotion to the next higher grade—that of passed assistant surgeon—and from a study of the above table it may be observed that the small number of passed assistant surgeons insures promotion to the middle grade—that of surgeon—after a short period of service. To illustrate, the junior officer of the grade of surgeon today has reached this grade after less than five years' service, and is in receipt of a salary of $3000 per annum. While this is somewhat exceptional, the prospects of promotion to this grade for the assistant surgeons now entering the service are very nearly as good.

The professional opportunities afforded the officers of the Medical Corps are very good at present, and are constantly improving. The first assignment to duty of a newly-appointed assistant surgeon is usually to some one of the fourteen naval hospitals, where he remains until the opening of the course at the Navy Medical School in Washington, early in October. At the naval hospitals the service is most instructive and valuable, the larger of these institutions having a capacity of from 150 to 200 beds, and at most times carrying a full quota of patients. The Medical School is essentially a post-graduate school, designed to fit the young officer for the intelligent application of his professional knowledge to the requirements of the naval service, and to give him a training in certain specialties peculiarly important to naval work and in which he has not had the opportunity or time to perfect himself in his college course.

THE FOLLOWING IS THE PAY-TABLE OF THE MEDICAL CORPS OF THE NAVY:

	At Sea.	On Shore.	Allowances Per Annum.*
Assistant Surgeons, rank of Lieutenant (junior grade)	$1,650.00	$1,402.50	$288.00
Passed Asssistant Surgeons, rank of Lieutenant	1,980.00	1,683.00	432.00
After five years IN THE SERVICE	2,160.00	1,836.00	432.00
After ten years IN THE SERVICE	2,340.00	1,989.00	432.00
Surgeons, rank of Lieutenant Commander—			
After ten years IN THE SERVICE	3,250.00	2,762.50	576.00
After fifteen years IN THE SERVICE	3,500.00	2,975.00	576.00
Medical Inspectors, rank of Commander—			
After fifteen years IN THE SERVICE	4,000.00	3,400.00	576.00
Medical Directors, rank of Captain—			
After fifteen years IN THE SERVICE	4,500.00	3,825.00	720.00
Surgeon General, rank of Rear Admiral	5,500.00	5,500.00	720.00

* Only when quarters are not furnished by the Government. Eight cents a mile is the allowance when traveling under orders.

The course of instruction comprises the following subjects: Military medicine, military surgery, tropical medicine, naval hygiene—its chemistry and biology—quarantine, the duties of medical officers, hospital-corps drill and administration, ophthalmology, naval law, manual of the sword and extracts from tactics, instructions in signals. Bacteriology, blood examination, and the study of animal parasites form very important branches of this course, and are given in one of the most modern and fully-equipped laboratories in this country. Five months are devoted to this school work, and after its completion the assistant surgeon is assigned to sea duty. Here, again, his work follows the line of advanced medical and surgical procedure. He is provided with the latest and best instruments of precision and operation, and is given every encouragement to perfect himself in the practice of his profession. The most recently-constructed battleships and large cruisers are equipped with hospital facilities equal to those found in most of our best organized small cities. Vessels of this type carry a crew of from 600 to 700 men, and for the care of the sick of these small villages afloat there is furnished for the medical officer a small hospital of from twenty to thirty beds, an isolation compartment, a dispensary, and an aseptic operating-room. These are equipped with every modern appliance for the prevention of disease, the care of the sick and wounded, for operative procedure, and for the prosecution of scientific investigations as far as practicable aboard ship. Other duties to which naval medical officers are assigned are those pertaining to the needs of navy-yards, naval stations, receiving ships, and recruiting work. Opportunity frequently occurs also for attendance of medical officers upon the meetings of medical and other scientific societies both at home and abroad as the accredited representatives of the Navy Department and the government.

The bill to create an osteopathic examining board in the State of New Jersey has been defeated.

Dr. Charles Stevens, secretary of the Antivaccination League of Minneapolis, died of smallpox on April 15.

The New Jersey legislature has passed a bill appropriating $200,000 for the proposed State Sanatorium for Tuberculosis in Hunterdon county.

The venerable Dr. Geo. W. Miltenberger has entirely recovered from the trouble for which he was recently operated upon at the Union Protestant Infirmary.

Applicants for appointment as medical inspectors of schools and as physicians to the poor in the District of Columbia will be required to stand a competitive examination.

The fatality of the typhoid-fever epidemic at Ithaca, N. Y., acording to the figures reported by Dr. Sover, the representative of the State Board of Health, was a little under 7 per cent.

The disease in Rice county, Kansas, reported some weeks ago as bubonic plague, proved, on investigation by the health authorities, to be malignant smallpox. Of the first twelve persons attacked eight died.

Chester, Pa., is now declared free from smallpox. This is good news to Maryland, for in the past two years this State has been involved oftener from Chester than from the great city of Philadelphia.

Suit has been brought against the Metropolitan Street Railways of New York for $10,000 for the loss of two teeth by a fall from a street car. Those valuable teeth belonged to Richard K. Fox, proprietor of the *Police Gazette*.

Plague is reported at Callao and Piser in Peru. A recrudescence of the disease is reported at Mazatlan, Mexico. According to official reports, there have been from December 1 to April 15 487 cases, with 328 deaths.

A death from smallpox occurred in Cumberland, Md., on May 15, the second death in the State in 1903. Four cases were reported in Worcester county, two in Baltimore county, six in Allegany county, and three in Baltimore city during the month.

The New Jersey legislature has appropriated $300,000 for a sanatorium for the treatment of the tuberculous poor. This amount is for the construction and equipment of buildings. Money for the purchase of a site was appropriated more than a year ago.

Milwaukee, also. The bill providing for the construction of a municipal hospital for infectious diseases provides that the owners of property affected by the proximity of the new hospital shall be entitled to recover the amount of damage actually sustained.

In the Province of Quebec a lot of individuals who object to State examinations for license to practice medicine are endeavoring to be qualified by act of Parliament. Special bills are under consideration licensing these persons to practice in the Province.

Albany, too, will be ahead of Baltimore in providing a hospital for infectious diseases. There will be no scrimmage about a site. The new isolation hospital is to be one of the group of city hospitals, and will cost $40,000. It is to be ready for patients on January 1, 1904.

On August 1 work will be begun on the first building of the Rockefeller Institute at the southwest corner of 62d street and Avenue A, New York city. The whole group of buildings, when completed, will occupy the blocks bounded by Avenue A, East river, 64th and 67th streets.

At Holyoke, Mass., the national bank has retired all its currency of $1 and $2 denominations, replacing them with new notes. This has been done to lessen the danger of smallpox infection. The bank officials hold that in the presence of smallpox money is probably an important vehicle of infection.

The old Jefferson Medical College is being demolished to make room for the first section of the new College Hospital. The date of its erection was 1828. The present hospital of the college, which was erected in 1877, will also be torn down, and the remainder of the new hospital will occupy its site.

A young woman of Scipio, Ind., recently died of smallpox. The source of her infection, it is said, was the clothing which her father had worn thirty-nine years ago when he was fatally attacked by smallpox. The clothing had been packed in a trunk throughout that long period. A vaccine virus of equal age might have saved the lady's life.

At Dresden recently a physician prescribed for a patient with asthma a powder containing belladonna, hyoscyamus, and stramonium. This powder was to be used as a snuff. The druggist dispensed the prescription in two snuff boxes, and wrapped each of them in a circular advertising Somatose. The advertisement directed that Somatose should be taken in teaspoonful doses in milk three times a day. Supposing that these directions referred to the snuff in the boxes, the patient took a teaspoonful in milk. He was severely, but not fatally, poisoned.

The Pediatric Club held an interesting meeting on May 21 to agitate the subject of a good milk supply for infant-feeding, and especially for the sick children of the poor in Baltimore. The chief speaker was Dr. Henry I. Cord of Newark, N. J. Other speakers were Dr. C. Hampson Jones, Dr. C. W. Mitchell and Messrs. Victor Bassett and Edwin Schorer.

The Maryland Public Health Association will hold its seventh annual session at Annapolis on June 4 and 5. Among the subjects to be discussed are smallpox and vaccination, typhoid and malarial fevers, mosquitoes, tuberculosis, water supplies. Papers will be presented by Dr. M. G. Elzey of Cumberstowe, Dr. Edwin J. Dirickson of Berlin, Dr. Thomas Brayshaw of Glenburnie, Drs. Wm. H. Welch, W. S. Thayer, A. K. Bond, Joseph E. Gichner, Charles O. Donovan, Wm. R. Stokes, and John S. Fulton of Baltimore.

The mayor of Philadelphia has appointed as director of the new Department of Public Health and Charities Dr. Edward Martin, professor of clinical surgery in the University of Pennsylvania. Dr. Martin has appointed as chief of the bureau of health Dr. Alex. C. Abbott, director of the public health laboratory of the city. He has also invited to serve as a board of consultants to the department Drs. S. Weir Mitchell, J. William White, John H. Musser, Chas. B. Penrose, Hobart A. Hare, and J. M. Anders.

Governor Odell of New York has signed the Doughty-Bailey bill regulating the automobile nuisance. There are speed rules for causeways and dams for the vicinity of postoffices, schools, churches, and villages, and the maximum speed permitted is twenty miles per hour in open country roads. Fines are provided ranging from $50 to $150.

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EFFECTS OF THE STREPTOCOCCUS ON THE CORTICAL NERVE CELL IN MENINGITIS.

By Leonard K. Hirshberg, M.D.

From the Pathological Laboratory of the College of Physicians and Surgeons, Baltimore.

The effects of various infectious processes, occurring naturally or produced experimentally, upon the internal structural substance of nerve cells have been fully investigated since Nissl first showed the changes occurring in the nerve cells after poisoning with strychnine, veratrine, alcohol, phosphorus, and tetanus toxin. Nissl[1] found that the effects of poisoning varied according to the substance used and the period during which the toxin acted. Concerning these changes Dr. Barker states that the absence of any strict proportionality between the visible morphological changes and the degree of functional disturbance is of the highest importance. Such incongruity should hold in check those zealous investigators who, without adequate data, are ready to interpret every histological finding in terms of the clinical symptoms. The alterations in the cells in acute and chronic poisoning up to the present can scarcely be brought into relation with the clinical symptoms.

Dejerine has showed the effects of fever upon the neurone. Babes and Goldscheider demonstrated the changes in the Nissl bodies in various infectious processes, and Nichols studied the neurones in typhoid fever. Among the various experimental diseases produced, the effects of which were studied, was that of bubonic plague by Lugaro. For a complete bibliography of the subject consult Barker. The latter made studies of nerve cells in a case of epidemic cerebro-spinal meningitis. Cells from the ventral horn of the spinal marrow in this case show disorganization of the stainable substance of Nissl. The nuclei are totally absent or displaced to the side of the cell.

For permission to report the findings in the following case of streptococcic cerebro-spinal meningitis I am indebted to Dr. William Royal Stokes, who, assisted by Dr. Darling, performed the autopsy and gave me much valuable assistance:

F., male, white, married, aged thirty-nine years. Admitted to the surgical service Baltimore City Hospital February 10, 1903. Patient was brought in unconscious. Dr. Gamble was unable to obtain much of the patient's history. He was a heavy drinker, and had been injured in a street brawl. Examination showed him to be a sparely-built man. Marked conjunctivitis, irregular and unequal pupils, which failed to react to light or accommodation. Stertorous breathing, temperature ranging from 102° to 104.2° F. Thready, small, rapid pulse; cyanosis. Rigidity and retraction of the muscles of the neck. More or less rigidity in the other muscles of the body repeatedly occurred, but were not constant. Kernig's sign at times present, sometimes absent. Babinsky's phenomenon was always present on the right side and absent on the left. Opisthotonos

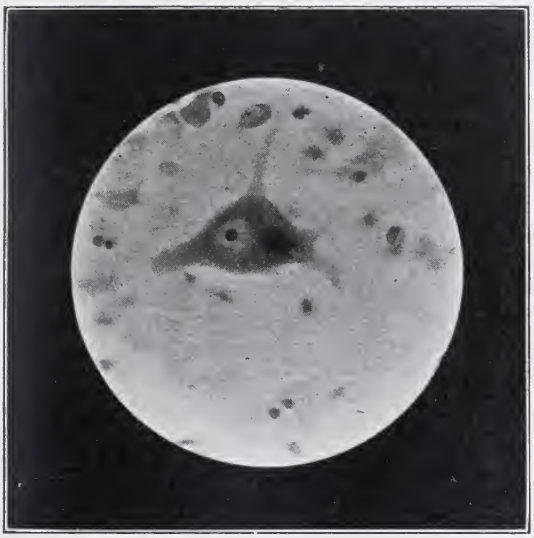
NORMAL CORTICAL NERVE CELL.

was not pronounced. Fleeting twitchings in the extremities and occasionally general convulsions were present. Monoplegia of the right arm came on before death. The increased deep reflexes entirely disappeared before death, but alternated often during the ten days' illness. Incontinence of urine and decubitus developed toward the end, as did a purulent conjunctivitis and paronychia. Death occurred in coma.

During life a lumbar puncture was made by Dr. West, the resident house officer, and a pure culture of streptococcus pyogenes was obtained. At the time of the autopsy I took cultures from the thick green exudate over the occipital lobes, and again obtained pure culture of the streptococcus pyogenes. Cultures from the viscera were sterile. From the pus in the conjunctivae white staphylococcus was obtained with the streptococci.

Autopsy No. 144, February 20, 1903. Died February 19, 1903, aged thirty-nine years. Clinical diagnosis: fractured skull, cerebro-spinal meningitis, myocarditis, endocarditis, pyemia, pneumonia at base of right lung.

Body well developed and nourished. About two inches external to the occipital protuberance, on the right side, there is surgical opening of the skin containing gauze. On exposing the skull there is a depression, a punched-out fracture, one-half inch in greatest diameter and two inches external to the occipital protuberance on right side of head. This is just beneath the surgical incision on the internal surface of the calvarium. The fracture projects inward as three fragments of bone. The fragments are surrounded by an area of extravasated blood. The under surface of the dura at this



CORTICAL NERVE CELL IN STREPTOCOCCUS MENINGITIS.

point contains a layer of purulent, thick, yellow material like the surface of a split lemon. Along the injected vessels of the pia-arachnoid of the cortex on the right side there is a yellowish purulent exudation, but on the left side the exudation is more diffuse and thicker. The cortex just beneath the fracture is depressed, but not ruptured.

Spinal Cord.—The subdural space of the cord is filled with thin, grayish fluid, and the vessels of the pia-arachnoid are injected.

Heart normal.

Lungs.—The lower lobes are hemorrhagic and semi-solid, but float in water. In the apex of both lungs there are a number of small tubercles and larger caseous areas.

Liver.—The liver is enlarged and soft, and contains a few yellowish areas on section. The kidneys, spleen, and other viscera seem normal.

Anatomical Diagnosis.—Purulent, traumatic cerebro-spinal meningitis; depressed fracture of skull; rupture of the dura; depression and bruising of right cortex; fatty liver.

Bacteriological Examination.—Cultures from the surface of the brain and the spinal fluid gave pure streptococci. The liver was sterile, as was the blood from the heart and lungs.

Lungs.—Apex contains a large caseous solitary tubercle. This is the main feature of the section. The peribronchial and perivascular connective tissue is much thickened. It is infiltrated in places with small, round cells resembling lymphoid cells. There are also a few fibroid tubercles containing giant cells. Many discrete, confluent tubercles are conspicuous in the lung tissue. Many areas present consist of fibrous tissue infiltrated with newly-formed blood-vessels. Many of the vessels are surrounded by areas of lymphoid cells. The newly-formed fibrous tissue contain a few normal air cells, and others are filled with a serous exudate or hyaline organizing exudate.

Kidney.—The cells of the convoluted tubules have nearly lost their nuclei. Some nuclei still remain as poorly-stained or shrunken remnants. Some of the nuclei show figures of karyorhexis, where the nuclear membrane is destroyed and the chromatin distributed through the cystoplasma. The Bowman's capsule of some glomeruli shows fibrous thickening, and many of the tubes of Henle contain hyaline and granular casts. The condition is one of intense degeneration of the cortex. Medulla and vessels normal.

Liver.—The peritoneal Glisson's capsule is thickened, and slight thickening in places of the periportal connective tissue. There is intense fatty degeneration of the liver cells. The inner zone of the lobule shows well-marked biliary infiltration of the liver cells.

Brain.—The subarachnoid space contains an exudate consisting of two zones. The inner zone, just in contact with the cortex, consists of a network of fibers, including many cells with long vesicular nuclei surrounded by much less staining cytoplasm. These are probably proliferated endothelial cells from the serous surfaces and the lymph spaces of the membrane. There are a few polymorphonuclear leucocytes in this zone.

The outer zone consists almost entirely of polymorphonuclear leucocytes. The tissues of the pia are also richly infiltrated and thickened by an exudate of pus-cells, in which, however, numerous proliferated endothelial cells are made out. Weigert's method shows a moderate number of streptococci in the exudate.

Heart Muscle.—The cross-striae are often difficult to make out. On cross-section many of the muscle fibers seem to contain interlacing network of clear canals running through the muscular protoplasm.

Spinal Cord.—No exudate present on surface of spinal cord. The perivascular connective tissue of the pia-arachnoid contains small collections of cells consisting of endothelium and polymorphonuclear leucocytes.

Lung.—The bronchi are filled with pus, and the air-cells contain an exudation consisting of an edematous fluid containing pus-cells and endothelial cells. Many of the alveoli are filled with pus, while others contain a fibrous exudate.

Sections taken from the cortex in the Rolandic area where the green, purulent exudate was very thick, stained by Nissl's modified method, show very interesting changes. All of the Nissl (or tigroid) bodies have entirely disappeared from the cell bodies. In no section was I able to distinguish a cell which retained the Nissl bodies. Many of the cells have lost their nuclei and taken the stain very poorly. The cells are shrunken, distorted, and irregular where the nucleus remains. It is swollen, vesicular, and its limiting membrane is at times in contact with the body wall of the cell. The nucleus as well as the nucleolus is displaced to the side of many cells. The change observed in these cells are not precisely like those which Barker found in his case of epidemic cerebro-spinal meningitis. The nuclei are not so much swollen in his case, and the nuclei are more constantly swollen than in the case here reported. The disorganization of the stainable substance of Nissl seems to be more complete in this case than in Barker's case. This may be either a question of degree of intoxication or it may show a distinct action of the streptococcus toxin. In our case the question of the direct or indirect action of the toxins in the nerve-cell bodies must have begun so early that we find complete chromatolysis. The probabilities are, as has been suggested before, that although there may have been some effects from reaction at a distance, direct or immediate action of the toxins of the streptococcus is the most probable.

I have to thank Drs. Stokes and Paton for advice and assistance in this work, and Dr. Fulton for the photomicrographs.

LITERATURE.

[1]Nissl, F.: *Neurol. Centralbl.*, Leip., Bd. XV, 1896.

[2]Von Leubossek: *Verhandl. d. Anat. Gesellsch.*, Jena, 1896, Bd. X.

[3]Barker, Lewellys F.: "The Nervous System," New York: D. Appleton & Co., 1899.

[4]Dejerine, J.: *Compt. rend. Soc. de Biol.*, Paris, 1897, t. IV, p. 728.

[5]Babes, V.: *Berl. klin. Wochsch.*, Bd. XXXV, 1898.

[6]Nichols, J.: *Journ. Exp. Medicine*, Vol. IV, 1899.

[7]Goldscheider, S.: *Fortsch. d. Med.*, Bd. XVI, 1898.

[8]Lugaro, E.: *Riv. di patol nero.*, Firenze, Vol. II, 1897.

[9]Barker: "Nervous System," p. 296.

IS CESAREAN SECTION ADVISABLE IN THE TREATMENT OF PLACENTA PREVIA?

By Henry D. Fry, M.D.,
Washington, D. C.

ADDRESS TO THE ALUMNI ASSOCIATION OF THE UNIVERSITY OF MARYLAND, MAY 18, 1903.

(*Introductory remarks omitted.*)

We all remember the comparatively recent discussions on the relative merits of the extra- and so-called intraperitoneal treatment of the stump in hysterectomy. The method of fixing it in the abdominal incision was popular because the death-rate was less than when it was dropped back into the peritoneal cavity. Some who had the boldness to follow the latter method took the precaution, however, to attach a string to the stump for the purpose of drawing it up for inspection in case of trouble. With improved technique this timidity disappeared, and at present no one thinks of doing a supravaginal hysterectomy by the unsurgical method of fastening the stump in the abdominal wound.

The disputed question of the proper treatment of ectopic pregnancy is also fresh in our minds. The advocates of the use of electricity contended with the advocates of immediate surgical interference. The pros and cons were forcibly advanced, but little, if any, difference of opinion prevails now on the subject.

The proper treatment of pus in the pelvis was another bone of contention. Many abdominal surgeons were carried away by enthusiasm and recommended abdominal section and a complete removal of the sac in all cases. The proposition gradually fought its way to recognition that there were selected cases which were preferably attacked from below and drained into the vagina.

These are but a few of many questions that have agitated one branch of our profession. In all such controversies the truth is obscured for awhile, but is finally recognized and must prevail. I invite your attention tonight to one of the latest questions brought before us to decide. Its place is not yet fixed, and, like the disputed subjects already mentioned, it will be settled by the results of experience.

Is Cesarean section advisable in the treatment of placenta previa?

The answer may seem clear to any one of us according to his experience and the way he views the subject, but nothing he can say or do will change the final verdict, which at most can only be delayed.

Let us, then, give our individual opinions and their reasons; they will live or die according to whether or not they are based on fact. In order to discuss the question more intelligently I shall consider, first, the maternal mortality of placenta previa by the present methods of treatment; second, the mortality of the mod-

ern Cesarean section; and, finally, under what, if any, circumstances is Cesarean section advisable in the treatment of placenta previa.

The death-rate of placenta previa is controlled as much or more by the variety of the complication as by the method of treatment. For that reason the majority of published statistics are unreliable. All varieties are usually classed together. Placenta previa centralis is a very different matter from placenta previa lateralis. The mortality of the former will be higher under the best methods of treatment, while that of the latter ought to be scarcely more than in normal labor.

However, if we take all varieties as they come, the present methods of treatment should not give a higher material mortality than 3 to 5 per cent.

The results published by Lomer in 1884 of the work of himself, Hofmeier, and Behm seemed utopian at the time, but others have followed with equally good showing.

Dr. Barton Cook Hirst had sixteen cases, with no death. At the meeting of the American Gynecological Society in 1901 I reported a series of fourteen cases without a death. Four successful cases can now be added to that list, making eighteen in all. Dr. J. B. Lee of Chicago reported at the same meeting twenty-five cases, with one death. These two series make fifty-nine, with one death, or 1.7 per cent. mortality.

In summing up results I have been careful to refer to the present *methods* of treatment, because I want to emphasize the fact that no intelligent obstetrician will speak of *a method* of treatment for placenta previa.

Each case must be handled on its own merits and according to conditions which exist in each particular instance. The tampon and leaving delivery is the best method in one class of cases; the forceps are best in another; podalic version in another; the combined external and internal method of version in another; and perhaps Cesarean section in still another.

He who takes in the entire situation and intelligently selects the method applicable to the case will obtain the best results. Modern methods have given valuable accessories to success—first, the recognition of the importance of emptying the uterus in every case of placenta previa as soon as the diagnosis is made; second, asepsis has eliminated one great source of fatality; third, the adoption of bipolar version in some cases; fourth, slow extraction of the infant has done much to lower maternal, if not fetal, mortality.

We must not omit to mention the prompt control of post-partum hemorrhage by the gauze tampon, nor the prompt relief from the effects of hemorrhage obtained by transfusion of saline solution.

To repeat, if we class together all varieties of placenta previa and treat the complication by best modern methods, properly selecting the one applicable to each case, we should be able to place the maternal mortality at from 3 to 5 per cent. If this be the case, it may very properly be asked whether such a formidable operation

as Cesarean section is ever advisable in the treatment of a complication managed so successfully by other means.

Before answering this, we must consider the next question: What is the mortality of Cesarean section by modern methods of treatment? It was a formidable operation in the past, but we must look at the results obtained today. Just as the mortality of placenta previa has been reduced from 25 or 40 per cent. to 3 or 5 per cent., so has the mortality of Cesarean section, done under proper conditions, been correspondingly lowered. Where the importance of performing Cesarean section is promptly recognized, and it is promptly done before the woman is infected or weakened by loss of blood or prolonged labor, it can be safely said the mortality is as low as that of placenta previa treated by modern methods—*i. e.*, 3 to 5 per cent.

My own experience with Cesarean section is limited to five cases. There is no death assignable to the operation. In one fatal case death was due to eclampsia. The operation was performed upon a woman with justo-minor pelvis brought to the hospital in convulsions. She died thirty-six hours after operation, having remained in a comatose condition, with recurrence of convulsions.

The autopsy showed the abdominal and uterine wounds in a healthy condition, no peritonitis, uterine cavity containing no blood. Dr. Whitridge Williams in his recent text-book says Zweifel has had seventy-six Cesarean sections, with one death; Reynolds twenty-three, with no death; 335 operations by ten different men, 6.87 per cent., which is reduced to 4.06 per cent. by excluding cases infected before operation.

Now, if the mortality of Cesarean section under these circumstances be as low as that obtained by the modern treatment of all varieties of placenta previa, they stand on the same basis. But selecting the class of cases of placenta previa which gives the highest death-rate when delivered per vias naturales, and reduce that death-rate by substituting Cesarean section, would be a distinct advantage. It is evident that the danger of delivery by any of the usual methods of treatment is increased in proportion to the amount of placental tissue inserted over the os, placenta previa centralis being the most dangerous. The unavoidable dilation and consequent separation of a larger placental area naturally cause greater hemorrhage.

In treating the condition by Cesarean section the dilation of the os is no longer unavoidable. When the uterus has been incised and the infant delivered, it is practically immaterial where the placenta is attached. It is as readily separated and extracted when implanted over the os as when upon the corpus or fundus. In other words, the fact that the placenta is attached centrally does not add materially to the gravity of the case when treated by Cesarean section, provided there has not been any great loss of blood before operation. Another condition that increases the dangers of delivery per vias naturales in placenta previa is the existence of an undilated and undilatable cervix. This complication will be met with in prima-gravidae.

Case VIII in the series I reported was of this character. The patient was a primipara in the eighth month of pregnancy. The cervix was firm and the canal tightly closed. Dilatation was begun with the steel instrument and followed by graduated hard-rubber dilators until the finger could be passed. The infant was turned by bipolar method. Labor pains came on, and it required six hours for dilatation and extraction of the infant, which was sacrificed.

In a case of this kind I would now perform a section in the interest of mother and child.

The successful performance of Cesarean section demands conditions which must enter into consideration. In the larger cities there is no difficulty in securing the services of men who are experienced in abdominal surgery. Skilled assistants and good surgical nurses are necessary. These and other conditions favorable to success are found to greater advantage in well-equipped hospitals. In remote sections of the country where such help cannot be obtained it is safer to exclude entirely the question of Cesarean section in the treatment of placenta previa. In the hands of the general practitioner the modern methods of treating the complication will give the best results.

So far we have not considered the infantile mortality. This is in the neighborhood of 50 or 60 per cent. A large number of the infants not dead when delivered are feeble, and succumb later on account of the premature birth.

Cesarean section would certainly increase the chances of saving more infants than delivery by the natural passages.

The conclusion is reached that Cesarean section is advisable in the treatment of placenta previa in a small proportion of cases: First, when the woman is in good condition, and has not been exhausted by prolonged labor or hemorrhage; second, when the placenta is implanted centrally or nearly so, and, third, when the cervix is undilated and undilatable.

Note.—June 2, 1903, I was called in consultation to see a primipara thirty-one years old. She had been married nine years; was six months pregnant. At four and one-half months there was bleeding; again at five and one-half, when I saw her, she was having labor pains and hemorrhage. Examination under chloroform disclosed a small vagina, cervix not effaced, and placenta covering the internal os. The vagina was tamponed, and she was immediately brought to my private hospital. Labor pains increased. The tampon was removed; cervix shorter, os about same. Repacked on account of hemorrhage.

After consultation it was decided to do Cesarean section. Fetus and placenta removed through incision; uterus contracted, and loss of blood not more than after normal labor.

Patient made uneventful recovery. Stitches removed eighth day; union by first intention.

Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

EXOPHTHALMIC GOITRE.

Moebius, in *Schmidt's Jahrbücher*, Vol. 278, Part 1, reviews some of the recent articles which have appeared on exophthalmic goitre or Basedow's disease. G. R. Murray (*Lancet*, December 13, 1902) gives the clinical history and symptoms of 120 cases of this disease, and among these cases the beginnings of the disease were noted in the youngest at fifteen years of age and the oldest at sixty-five years of age. In his series of cases there was no evidence of the disease being inherited, though in several cases two or more members of the same generation were affected. As far as could be made out the most frequent cause of the condition was some form of emotional excitement. In all but three cases the swelling of the gland was present, while in a small number of cases various mental symptoms were present, such as suicidal mania and optical hallucinations. Falling out of the hair was present in many cases, and 35 of the 120 had rather persistent diarrhea. The course of the disease in the great majority of these cases was distinctly chronic, while as regards treatment Murray himself believes that faradization offers the greatest hope of success, a weak current being transmitted through the neck for an hour at a time at frequent intervals.

Von Schrötter (*Zeitschrift für klinische Med.*, 1903, Vol. XLVIII, p. 1), in reporting a case in which the disease was associated with skin changes, notably areas of deeper pigmentation and leucodermic patches, insists that in many cases exophthalmic goitre is confused with certain atypical cases of myxedema.

Donath (*Zeitschrift für klinische Med.*, 1903, Vol. XLVIII, p. 65) has determined the blood-pressure in patients with Basedow's disease, using the instruments of Basch, Hawksley, and Gärtner. From these results he was able to show that in only a very small number of cases was the blood-pressure diminished, while of the great majority of cases, in about half the pressure was normal, in about half, increased.

Durand (Thesis, 1902) pays especial attention to the use of electricity in the treatment of the disease. According to Durand, the fact that the disease is a perversion or disturbance of glandular function should make it one peculiarly liable to be treated favorably by means of electricity. According to him, galvanization is preferable to faradization. He uses two large sponge electrodes, having an area of from 100 to 200 square centimeters, applying one over the gland, the other over the back of the neck. Half-hour

daily treatments are given in this way, the current being quite strong, sometimes reaching 60 milliampères. In the treatment of patients by this method the tachycardia is the first symptom to disappear, the exophthalmus the last, while with faradization the tremor, the goitre, and the exophthalmus disappear before the tachycardia.

Lanz (*Münchener med. Wochenschrift*, 1903, No. 4) calls attention to the method which he employs in the treatment of this disease. He gives regularly to these patients the milk of goats with their thyroids removed by operation, and he reports in this article five cases where marked improvements followed this mode of treatment.

Moebius himself has used this method, while in a later communication (*Münchener med. Wochenschrift*, 1903, No. 4) he states that he has been obtaining satisfactory results with a specific serum prepared by Merck.

* * *

THE MEDICO-LEGAL TEST OF BLOOD-STAINS.

Layton (*American Medicine*, June 6, 1903) discusses that most interesting of problems in forensic medicine—the identification of human blood-stains. The recognized blood-tests, with the exception of the serum test, of which he speaks later, are, first, the finding of the red-blood corpuscles; second, the proof of the presence of hemoglobin; third, the demonstration of hemin cystals, and fourth, the formation of the characteristic hematoporphyrin spectrum, these tests, of course, being designed to show whether or not blood is present, without any reference to whether the blood is from human beings or animals.

Birchmore claims that he is able to differentiate human blood from that of animals by careful measurements of the size of the corpuscles, but no other author has found that this method is practical; in fact, Däubler, who measured the red-blood corpuscles of men and of various animals, found that the differences were far too small to allow one to determine whether the blood was human or not.

Moser believes that by the microscopic examination of the hemoglobin crystals he can differentiate human blood from that of animals, but this method is of little practical value because of the fact that in the vast majority of cases the blood-stains that need to be examined are very old.

Ziemke suggests an interesting method, the solubility of the hemoglobin of different bloods in the various alkalies, and he reports that invariably human hemoglobin was dissolved much sooner than that of animals.

The most interesting test is the serum test described by Bordet, Uhlenhuth, and others. Uhlenhuth's method of making the test,

as the reviewer has previously described in the MARYLAND MEDICAL JOURNAL, is as follows:

Ten c. c. of defibrinated human blood were injected into the peritoneal cavity of a rabbit at intervals of six days, and after five such injections an effective serum could be obtained. The blood of eighteen different animals was obtained and diluted with water, 1 to 100, and filtered. Of this clear, slightly red solution, 2 c. c. were placed in a small tube and mixed with an equal quantity of 1.6 per cent. salt solution. Six to eight drops of the serum of the rabbit were added to each of these tubes, but all remained perfectly clear except the tube containing human blood. The reaction is extremely delicate and can be obtained with very slight traces of blood, while it was also obtainable from blood which had been kept in dry condition for four weeks.

The objects of Layton's work were, first, a given stain having proved to be blood, is it possible to prove whether or no the stain was made by human blood? Second, if so, is the proposed test always specific? Third, is its accuracy modified by the age of the stain, or by the admixture of other blood or by foreign matter? Fourth, is the proposed test sufficiently accurate and invariable for medico-legal purposes?

Layton, in his series of experiments upon rabbits, followed the method of Uhlenhuth, "believing that an absolute differentiation of blood-stains is possible by this means if properly employed, and that a microscopic differentiation is impossible, or at least impracticable for medico-legal purposes." His exact method of making his tests was as follows:

A given amount of the test serum is diluted to the desired extent with sterile water or normal salt solution. To a few cubic centimeters of this diluted solution in a sterile test tube is added an equal quantity of a similarly diluted solution of the blood to be tested, and the tube left at room temperature or placed for two or three hours in the incubator at 37° C. The reaction, if it occurs, will be more rapid and more marked if the tube is exposed to the higher temperature. If the dilution be sufficient, the reaction will not occur at room temperature. If the test serum is used and undiluted and pure human blood is added to it, the reaction is immediate. If the dilute solutions are used, the time required in the incubator varies from one to several hours. If only the sample of blood to be tested is diluted and the test serum used pure, the reaction is also immediate. The reaction is marked by a turbidity of the solution, becoming constantly more intense, and in the case of the strong solutions of human blood, going on to the formation of a flocculent precipitate, which slowly settles to the bottom of the test tube.

If an old stain is to be examined by the serum test, the material containing it is washed out in sterile water or in sterile normal salt solution, the mixture repeatedly filtered, and finally added to some

of the test serum, as in the examination of fresh blood already described.

By the above method Layton made thirty-five comparative tests of human and monkey blood. The most frequent sources of error are, first, the contamination of the specimen tested with monkey blood; second, contamination with albumen precipitants, and third, too long incubation. The first may be excluded by proper dilution of the specimen, or of both specimen and test serum, and by control tests: the second may be excluded by control tests, while the third may be excluded by control tests and by parallel tests in the cold, diluting only the blood tested. Layton's article is a most interesting and well-written one, and, besides the results of his own experiments, gives a careful historical review of the work of others along the same lines. His conclusions are as follows:

1. The reaction is caused by the development within the blood serum of the injected animal of an antibody or a property or substance which causes a certain reaction with the serum homologous to the one injected.

2. The reaction does not occur when normal rabbit serum is used.

3. The reaction occurs much more rapidly, especially when dilute solutions are used, if the test is exposed to a temperature of 37° C., although it will occur at ordinary room temperature.

4. An immediate result in the cold is obtainable by diluting only the blood tested, the test serum being used pure.

5. The reaction is obtainable when using a dilution of the test serum of 1 to 20,000 or of the blood tested of 1 to 4000. Hence, only a minute stain and a single drop of the test serum are required for making the test.

6. The delicacy of the test is not altered by the admixture of other bloods or of other foreign material except the albumen precipitants.

7. The presence or absence of mineral salts, such as copper sulphate or of other precipitants of albumen, can be determined by the control tests.

8. The delicacy of the test is not materially altered by the age of the stain.

9. A differentiation from monkey blood is possible, and contamination with monkey blood can be excluded, first, by a great dilution of the blood tested and a dilution of the test serum of 1 to 500, with incubation: second, by a great dilution of the blood tested, the test serum being used pure and the test made at room temperature.

10. The test is specific, invariable, and therefore applicable to forensic use.

* * *

ON THE TEACHING OF PHYSICAL DIAGNOSIS.

Thayer (*Boston Medical and Surgical Journal,* December 25, 1902) contributes a very interesting article and one full of practi-

cal suggestions on the teaching of physical diagnosis. After sketching briefly the change in the methods of medical education within the past twenty years, the didactic lecture giving way to the more modern and practical clinical methods, he discusses, in turn, various propositions in connection with the subject, among which may be mentioned the necessity of a good knowledge of regional anatomy and of practice in the physical examination of the normal subject, the importance of understanding the physical basis of auscultation and percussion, the necessity of a good training in pathological anatomy, the importance of approaching the subject of physical diagnosis without preconceived ideas, the advantages of subdivision of classes into small sections, the importance of practice in an out-patient department as a part of the course in physical diagnosis, and the necessity of bedside experience as a part of the school training of the student of medicine. These propositions and Thayer's views regarding them expressed in concise form are as follows:

1. An essential part of the teaching of physical diagnosis consists in the demonstration of those points in regional anatomy, an accurate knowledge of which is necessary to the diagnostician. Such demonstration should be accompanied by exercises in the application of the fundamental methods of physical examination to the normal individual.

2. It is desirable that the student should learn, as far as possible by actual observation and practice, the physical causes for the signs to be noted on inspection and palpation and elicited by auscultation and percussion of the normal subject. Without this a proper interpretation of pathological derivations from these signs is impossible.

3. A thorough training in pathological anatomy is an absolute necessity for the student of diagnostic methods, and frequent demonstrations in the necropsy-room of the lesions with which the student is meeting in the living individual form an important part of the course in physical diagnosis.

4. The study of physical diagnosis should be approached without preconceived ideas beyond those acquired from the study of the normal individual. The student should not be allowed to consult books upon the subject until he has already learned to detect upon the living individual the more important physical manifestations of disease. He who begins the study of diagnosis in the text-book is in grave danger of acquiring habits of mind which may seriously affect his diagnostic abilities in later life.

5. To properly train the student in this manner necessitates the subdivision of a class into small sections, in order that each man may personally control every observation which is made during the exercise.

6. As a part of the course in physical diagnosis the student should have a fair experience in the examination of patients as they come, in the ordinary course of events, to an out-patient clinic, in order that he may acquire skill in the taking of histories, in the practice of topographical percussion, and in the habit of forming his diagnosis without help or assistance. This work should, if possible, be under the direct supervision of instructors.

7. No man is properly fitted to begin the practice of medicine who has not had a reasonable amount of actual bedside experience in the observation of the more important diseases which he is to meet in his practice. This can be easily accomplished (1) by insisting, according to the English system, that the student shall have several months' experience as a clinical clerk in the wards of a hospital; (2) by providing for daily or frequently-repeated ward visits with an instructor for at least an equal length of time. The presence of medical students as clinical clerks in the wards of a general hospital is in no way detrimental to the interests of the patients or of the institution. On the contrary, such an arrangement is perfectly feasible and of great assistance to patients, physicians and hospital.

SURGERY.

Under the Supervision of Hugh H. Young, M.D., Baltimore, Assisted by H. A. Fowler, M.D.

Renal Decapsulation for Chronic Bright's Disease. George M. Edebohls. *Medical Record*, March 28, 1903.

In this paper Edebohls records the results of his operation for chronic Bright's disease, including all of his cases up to the end of 1902, a total of fifty-one cases. During the year 1902 thirty-two cases were added to his list previously published. This affords a large number of cases for study, comparison, and deductions.

The first operation undertaken for the deliberate purpose of curing chronic Bright's disease was performed by Edebohls January 10, 1898. This patient is now living, all symptoms of her chronic Bright's disease having disappeared. Frequent examinations of the urine during the past five years have invariably shown normal conditions.

In the earlier cases the kidneys were movable as well as being affected with chronic Bright's disease. The operation then practiced was extensive decapsulation, with fixation. At first the good results following operation was attributed to the correction of the position of the kidney. Later observations, however, led the author to believe that the decapsulation was chiefly responsible for the improvement noted. This is considered to take place in the following

way: The capsule acted as a barrier to the formation of a new, increased, and more active blood supply to the diseased kidney. The removal of this barrier by renal decapsulation is followed by the formation, on the most extensive scale possible, of new vascular connections between the kidney and its fatty capsule. This increased blood supply results in the removal of the inflammatory products by absorption and the formation of new epithelium capable of carrying on the function of secretion.

Since the announcement of this method of treatment in chronic Bright's disease reports of nine cases by seven other American authors have been reported. The time intervening between operation and the reports is so short as to preclude any general deductions.

An analysis of the fifty-one cases shows twenty-nine females, twenty-two males. All were adults except one girl of four and one-half years. The oldest case was a man sixty-seven.

The more recent cases have been suffering from a more severe grade of kidney disease. Examination left no doubt as to the diagnosis. The time elapsing between the first recognition of chronic Bright's disease and the operation was between one month and nineteen years, the average being three years and four months. The time the disease was actually present, however, must have been much longer. Very few of the thirty-two cases operated on in 1902 were uncomplicated or only slightly complicated. Nearly all presented minor, great or extreme cardiac and vascular degenerations, arteriosclerosis, hypertrophies of all degrees up to the point of noncompensation and beginning dilatation, pericarditis, and endocarditis. Pleuritis and hydrothorax were by no means rare complications, while one patient had cavities in both lungs, and two patients were suffering from cirrhosis of the liver in addition to the kidney lesion.

The classification of the cases, according to the pathological changes found, into parenchymatous, interstitial, and diffuse chronic nephritis is maintained. Of the fifty-one cases operated upon, twenty-nine had chronic interstitial, fourteen had chronic diffuse, and eight had chronic parenchymatous nephritis. In the interstitial group the disease was limited to one kidney in no less than nine cases. In the remaining two groups both kidneys were affected, though not always to the same degree.

That cases of unilateral chronic Bright's disease do occur seems beyond question. Surgeons now and then meet the disease in its earlier stages unilaterally. Physicians, on the other hand, usually see the patients only after the disease has reached its later stages. Chronic Bright's disease as such and in itself never causes death, and only rarely is it detected when limited to one kidney. It has been abundantly proven that one-third of the total kidney substance possessed by man is sufficient to sustain life.

By way of preparation of the patients for operation, rest in bed for a few days is advisable. The heart is generally more or less in-

volved, and favoring the organ for a few days by rest in bed betters its chances of standing the added strain put on it by the operation. Rest in bed also minimizes the eliminative work of the kidneys.

Administration of urotropin in presence of pus and bacteria is indicated. Cardiac and vascular regulators, such as strychnine, digitalis, nitroglycerine, are to be used according to the indications. Large experience with the technique of the operation has emphasized three factors which make renal decapsulation more or less difficult or a comparatively easy procedure.

These are (1) great length and obliquity of the twelfth rib, with narrowness of the space between ribs and crest of the ilium. The difficulty when present may be overcome by proper posturing and by slight modification of the obliquity of the incision. (2) Mobility of the kidney to be operated upon or its firm attachment well up beneath the ribs. In the latter case, when only the lower pole of the kidney can be reached, it is best to incise the capsule at any portion where it can be reached; to seize the edges of the capsule with forceps and complete decapsulation in the depths of the wound. The very best instrument in such cases is the index finger of the rubber-gloved hand. (3) More or less firm attachment of the capsule proper to the kidney. This occurs particularly in the chronic interstitial form. As the kidney substance is often brittle and friable, great caution must be used to prevent tearing or fracturing the kidney substance.

The danger of operations in cases of chronic Bright's disease is, generally speaking, greater from the anesthetic than from the operation. It is very important that the length of administration should not be prolonged. One hour should be the time required for the decapsulation of both kidneys. The total duration of anesthesia for operation on the kidneys at different times would be greater than operating on both kidneys at one time. Ether is the anesthetic to be used.

In the thirty-two operations during 1902 both kidneys were operated on at the same sitting. The wound was closed throughout and drainage was entirely dispensed with. The cases of chronic nephritis with infection did just as well as the cases without infection.

Of the fifty-one cases, all but three have been followed. There have been fourteen deaths after operation at periods of time varying between twelve hours and eight years. Two patients died an accidental death, one died of acute suppurative pyelonephritis, one of endocarditis, five of uremia, one of pneumonia, three of acute dilatation of the heart. In one case death was due to a combination of uremia and cerebral hemiplegia.

In seven cases death occurred at remote periods varying between two months and eight years. The average duration of life after operation was one year and eight months. In the remaining seven cases death followed the operation at periods varying between

twelve hours and fifteen days, and represent the operative mortality in the fifty-one cases.

Of these seven cases, three died of uremia, two of acute dilatation of the heart, one of pneumonia, and one of uremia combined with cerebral hemiplegia. In judging the mortality it must be remembered that several patients were operated on when the fatal outcome was a foregone conclusion, the patients insisting on an operation. Since the limits beyond which an operation could no longer avail to improve the conditions were not known, these patients were given the benefit of the doubt and the operation performed.

In advising for or against operation much will depend on a careful consideration of the general condition of the patient. A patient over sixty years of age should be most carefully examined before operation is decided upon. The changes in the blood-vessels due to advancing age, added to those of chronic Bright's disease, constitute a serious handicap for the patient. To prove that cure or improvement following renal decapsulation is due to the operation it must be shown (1) that cure or improvement follows the operation with practical uniformity; (2) that a cure once obtained is, as a rule, lasting, and (3) that an improvement attained by operation is steadily progressive in character.

Edebohls believes a careful study of his cases shows these conditions to have been fulfilled.

The following summary is appended:

Seven patients died within seventeen days after operation.

Seven patients died at periods after operation varying between two months and eight years, the average period of life after operation being one year and eight months.

Two patients do not show improvement satisfactory in every respect.

Twenty-two patients are in various stages of satisfactory improvement and progress towards health at periods varying between two months and fifteen months after operation. The urine of several of these is at present free from albumen and casts. They have not, however, passed the probationary period of six months of normal urine, before the expiration of which no patient is entitled to a place on the list of cures.

One patient, after a cure extending over a period of four years, again has chronic Bright's disease. One of her kidneys only was operated upon.

Nine patients were cured of chronic Bright's disease, and remained cured at periods after operation varying from one year and nine months to ten years, the average duration of cure being over four years.

Three patients disappeared from observation after leaving hospital, and no trace of them can be found.

PATHOLOGY AND BACTERIOLOGY.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

PERITONITIS IN TYPHOID FEVER WITHOUT PERFORATION, WITH A REPORT OF ONE CASE CAUSED BY THE BACILLUS TYPHOSUS AND ANOTHER SIMULATING ACUTE APPENDICITIS. J. L. Yates. *American Medicine*, May 2, 1903.

Peritonitis without perforation in typhoid fever is a sufficiently frequent complication to warrant its consideration. In the records of 4300 cases reported by Horton Smith and others it was found seventy-three times (1.7 per cent.), which is approximately one-third as frequent as the perforation form. The etiology is evident in most instances, namely, a direct extension from or rupture of an intra or extra abdominal focus of infection, which may be suppurative. It frequently happens that no explanation can be found for the origin of peritonitis. In the instances of indeterminable origin, as, for example, those referred to by Murchison, where the peritonitis developed "before ulceration had commenced, and even during the first week of the fever," the bacteria must have reached the peritoneal cavity either by penetrating the intestinal wall or through the general circulation. As Curschmann has pointed out, peritonitis is seldom independent of the specific lesions in the solitary follicles of Peyer's patches. No record is to be found of a peritonitis occurring in those rare instances of typhoid fever without intestinal lesions. It is most improbable that bacteria ever penetrate a perfectly normal intestinal wall and reach the peritoneum. However, the variations from the normal that make the wall penetrable may be at times comparatively slight. That the mere presence of bacteria within the peritoneal cavity is commonly insufficient to induce a peritonitis, though a source at times of fatal infection, is well known in the experiments of Grawitz, Orth, and Halstead. The bacteriology of non-perforative peritonitis has been too little observed to give any clue to the micro-organisms most frequently present. It is possible, however, that the typhoid bacillus occurs more frequently, particularly in pure culture, than in the perforative cases. In the few instances where it has occurred there has usually followed a rapidly fatal inflammation, that has fallen in well with the dictum that the extent of the local lesion varies inversely with the severity of the infection. This indicates, as Shattuck, Warren, and Cobb have pointed out, a most unexpected virulence in the typhoid bacillus. The longer the inflammation exists, as exemplified by the localized forms and by Korte's case, the more pronounced is the degree of suppuration coinciding with the observations on the action of the pyogenic cocci. Pathologically there is nothing characteristic about the peritonitis. It may be general or localized, serofibrinous, or purulent. The assumption that the non-perforative inflammation is more apt to be localized because of a slower invasion of the peritoneum does not seem to be borne out. However, it must

be remembered that such conditions would be the less apt to lead to operation or autopsy.

Yates gives a *résumé* of several recorded cases, and reports two cases of his own, one of which closely simulated an appendicitis. From a study of these he concludes:

1. Non-perforative peritonitis usually results from an extension of inflammation through the basis of deep intestinal ulcers, but may also arise from the migration of bacteria through an intestinal wall which is relatively but slightly abnormal.

2. Meteorism predisposes to an infection of the peritoneal cavity, and by decreasing the normal peritoneal absorption furnishes a secondary cause for peritonitis.

3. A hematogenous origin of peritonitis is possible in typhoid fever.

4. Non-perforative peritonitis is commonly caused by the typhoid bacillus, and the resulting inflammation is usually diffuse and often severe.

5. The inception of such a peritonitis is clinically indistinguishable from the so-called signs of perforation, and the symptoms in both are due to peritoneal inflammation. The prognosis is probably equally grave in the two forms.

6. There should be appropriate surgical intervention immediately the peritonitis can be recognized.

7. Thrombi, and among them those composed of agglutinated red-blood corpuscles, may lead to hemorrhages into the wall of the intestine, and the resulting changes favor the transmigration of bacteria into the peritoneal cavity.

8. Infarction of the spleen may have a similar thrombotic causation, but simply splenic infarction is probably not a cause of peritonitis.

9. The specific action upon human blood of an agglutinin generated by the typhoid bacillus can be demonstrated in vitro.

* * *

Congenital Tumors of the Kidney, With a Report of Two Cases. L. W. Strong. *Archv. of Pediatrics*, May, 1903.

The first clear understanding of renal tumors began with the work of Grawitz, who, in 1883, recognized the adrenal origin of a certain class of these growths. He showed that what had been previously described as sarcomata, carcinomata, endotheliomata, rhabdomyomata belong in reality to one class which he denotes as embryonal adeno-sarcomata. The most striking thing about malignant tumors of the kidney in general is that although they develop in the kidney substance, their structure and elements are totally unlike those of the kidney itself. In the embryonal adeno-sarcoma the explanation of this fact is easily seen when it is remembered that it takes its origin from the remains of the Wolffian body. It is with the group of adeno-sarcomata that this report is concerned, both to consider its origin from the Wolffian body and to bring out certain histological features. Characteristic of these tumors is

their occurrence in the first years of life. No accredited case appears later than the ninth year.

As to the histology, Birch-Hirschfeld first showed that the essential feature was a mixture of glandular structures and archiblastic tissue, reminding one of rapidly-growing embryonic tissue. Sometimes the glandular element predominates, and again the connective tissue.

The author reports two cases, the chief symptom of both being the increased size of the abdomen due to the tumor. Both cases came to autopsy, and the tumors were carefully studied, and the following conclusions were reached.

1. Histological examination shows that these tumors resemble the embryonic Wolffian body.
2. There is a continuous system of tubules and their derivative cell masses throughout the tumor.
3. The tubules are the primary mesothelial elements, and the cell masses are derived from them by retrograde metamorphosis.
4. The histological characteristics vary with the age of the part. The pelvic region is oldest, and shows complete differentiation of mesenchyme and mesothelium; the metastases are youngest, and show, not transitions between mesothelium and mesenchyme, but an embryonic condition where all cells are alike.
5. Bilateral tumors are coincident, and not metastatic.
6. Metastases may occur through the lymph stream as well as through the blood stream.

* * *

A New Method for the Application of Widal's Test for the Diagnosis of Typhoid Fever. A. J. Wolff. *Am. Jour. Med. Sciences*, April, 1903.

A loop from the feces of the suspected case is smeared upon the surface of an agar slant in a prepared tube and sent to the laboratory just as diphtheria cultures are prepared. In the absence of an agar tube a small piece of paper soiled with the feces may be sent in a tighty-closed bottle. From this first specimen one or more bouillon cultures are prepared. The bouillon must react from 1 to 2 per cent. alkaline with the n/10 acid, using phenolphthalein as the indicator. The infected bouillon is now incubated at the usual temperature for twelve hours, when the examination is ready to be made. A sample of the blood is taken at the same time the specimen of the feces is procured. This is mixed with the bouillon culture by the usual procedure and placed upon the stage of the microscope. If now there is sufficient agglutinative material present the typhoid bacilli (if they exist in the culture) will very shortly form clumps in the field, which will be observed full of colon bacilli in active motion, and if this reaction does occur we can safely say that the case has advanced to the second week of the disease. Should no reaction take place, another sample of the bouillon culture is tested with the blood from an advanced case of typhoid fever, the agglutinated power of which has

been tested by the ordinary method, with a pure culture of the bacillus of Eberth. With this blood, if the feces contain any typhoid bacillus, a positive and distinct reaction will occur, the clumps of typhoid bacilli being more or less numerous according to the typhoid organisms present, while the still motile colon bacilli occupy the rest of the field and are seen to be in active motion. This indicates that the disease is one of typhoid fever, and that the disease is in the early stage, at least from the middle to the end of the first week. By this method the author claims to be able to diagnose typhoid fever in the early stage of the disease when the other symptoms may be more or less masked. He likewise claims that the bacilli of typhoid are present in the feces quite a time before the outbreak of symptoms.

* * *

New Stain for the Diphtheria Bacillus. W. G. Schauffler. *Medical Record*, December 6, 1902.

The author describes a new method, a modification of Piorkowski stain, to detect diphtheria bacilli in fresh specimens from the membranes or from cultures. The solutions used are as follows: Filtered solution, Loffler's methylene blue, 10 c. c.; filtered solution, pyronin (Grubler), 1.5 c. c.: 3 per cent. H. cl. alcohol, 0.5 c. c.

The specimen is prepared as usual and covered by the above solution for one minute. Wash in water, dry, and mount in balsam.

This method shows the body of the bacilli stained blue, while the poles are a bright ruby red. This differentiates the true from the pseudo-diphtheria bacilli, as the latter stain blue throughout.

* * *

A New Diphtheria Serum. Wasserman. *Deutsche med. Woch.*, October, 1902; *Pediatrics*, January, 1903.

It is well known that the present and valuable diphtheria antitoxin has no bactericidal action on the diphtheria bacilli, at least outside the body. They can even be made to grow in it. Search has long been made for a serum antagonistic alike to the organism and its toxin, but so far unsuccessfully. In certain other diseases, such as typhoid, cholera, and plague, a serum has been obtained which is antagonistic to the organism of these diseases. Such a serum is distinguished by the name antimicrobic. In the case of the well-known antitoxic serum of diphtheria its inoculation into the human body will protect that individual against subsequent infection with diphtheira, or assist in curing him if he be already infected, and its action is very simple. It merely enters into chemical union with any free toxin finding its way into the blood. The result of this union is a harmless compound. If an antimicrobic serum be inoculated into an animal infected by its specific bacilli, it gradually brings about the destruction of the bacilli, but in a somewhat complex way. So far as this is at present known, there appears to be more than one reaction dependent upon different properties in the serum, and these may be differently possessed by different sera. The phenomenon of the Widal reaction depends upon one of these. A serum

having this reaction possesses a substance called agglutinin, which causes the bacilli to adhere together in clumps. These are then in most cases precipitated, though some authorities hold that this latter action is due to a separate substance called precipitin. These phenomena are related to antimicrobism, but they do not of themselves result in the actual destruction of the bacilli. This is accomplished, however, by another property in the serum which dissolves the bodies of the bacilli, known as lysogenic action. This lysogenesis is a most important phenomenon, and it is exhibited by sera towards a great variety of cells other than bacteria. It has come to be spoken of as cytolysis, and the substance capable of causing it as cytolysin. Wasserman claims to have discovered an antidiphtheritic serum which antagonizes alike the diphtheria bacillus and its toxin, which, in other words, is both antimicrobic and antitoxic. It is true that the present antidiphtheritic serum, though it is only antitoxic, is a powerful protective and curative agent, and it is not easy to understand how it can be so when it has no action upon the bacteria themselves. When it is remembered, however, that its action within the animal tissue may be somewhat different from what it is in vitro, this can be understood. The antitoxic serum counteracts all the diphtheria poison as quickly as it is formed; hence tissue destruction ceases, and the natural bactericidal powers of the invaded tissues are exerted to their fullest extent, gradually bringing about the destruction of the now harmless bacilli. This is doubtless the explanation of the method of cure in the great number of successful diphtheria cases, in which the patient not only completely recovers, but ceases to be a source of infection to others. It does not, however, account for those cases in a certain proportion of which, though recovery is apparently complete, the bacilli, in a virulent state, are still found either in the throat or nose or air passages. The individual who harbors these bacilli is himself immune to their action, but he remains a source of danger to others. The bactericidal powers of his tissues are apparently insufficient to bring about the destruction of these bacilli; hence it would certainly be an advance if we possessed a serum capable, when injected, of destroying them. Wasserman's method of obtaining this serum is ingenious. He injected dead diphtheria bacilli into rabbits, etc. If living bacilli, even in small numbers, are injected, the animals mostly die. The bacilli are heated to 60° C. for twenty-four hours, and further dried in an exsiccator and pulverized in a mortar. The powder is extracted with 1 per cent. ethylendiamin solution. To 1 gramme of diphtheria bacilli powder 20 c. c. of ethylendiamin solution is added. It is shaken several times in a special apparatus, and after standing for twenty-four hours it is filtered and centrifuged. This gives a clear fluid of a yellow color, containing substances obtained from the bodies of the bacilli. Acetic acid gives with it a copious precipitate. Death from diphtheritic poisoning followed its injection into rabbits. This showed that the solution contained free diphtheria toxin derived from the bodies of the bacilli and extracted by

the ethylendiamin. A quantity of diphtheria antitoxin sufficient to neutralize this free toxin was next added to the solution, and 2 to 4 c. c. of this neutralized fluid injected into rabbits. A reduction of body weight followed, showing that it was capable of causing disturbances of metabolism. The serum withdrawn from the animals thus treated, when added to the clear extract obtained from the bacilli as above mentioned, caused a cloudiness, which sank to the bottom as a flocculent precipitate. This does not occur with the serum of control animals not so injected. He thinks that this serum, in addition to being of therapeutic value, may serve as an important means of distinguishing between the true and false diphtheria bacillus.

Society Reports.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD FEBRUARY 2, 1903.

Enucleation of Sarcoma of the Tibia—Dr. Bloodgood.—Nine years ago the patient's leg was injured. Ever since then he has noticed pain and tenderness there and has had what he called "a game leg." Two and a half years before being examined he noticed a slight growing swelling in the leg, causing a uniform expansion of the tibia. The growth felt hard and was rougher than the shaft beneath it. The *x*-rays showed a soft tumor, which, at operation, was readily shelled out of the surrounding bony tissue and was found to be a giant-celled sarcoma of the medullary cavity.

The granular tissue in the wound was examined microscopically two weeks ago and no evidence of recurrence was found. At present bone formation may be observed in the granulation tissue. As giant-celled sarcomata contain no bone and no bone formation, the outlook is good. Giant-celled sarcomata are the least malignant of all the types of sarcoma.

Two Cases of Cervical Rib—Drs. H. M. Thomas and Harvey Cushing.—The first patient, a female, was admitted to the hospital May 21, 1902, complaining of curious nervous symptoms. She had had pelvic trouble subsequent to the birth of a child, and had had double oophorectomy done. One year ago she commenced to have intense paroxysmal pains down the right arm. The arm became weak and the hand atrophied. There was some trouble in the right leg. On examination the atrophy of the hand and the weakness of the arm were noted, but no anesthesia was found. Electrical treatment was given, as if for a local neuritis, but the pain became still worse, and there were one or two so-called attacks of unconsciousness, with convulsions. A lump developed on the right arm. At this point it was thought that there might be a tumor pressing on the nerve roots. Eventually anesthesia developed in the right arm, and sensation in the right leg was also impaired. When examined by Dr. Cushing the anesthesia extended to the face and chest. There was thus a hysterical paralysis, accompanied with local disturbances. The pupils were normal. There was reaction of degeneration in the right thumb and first interosseus muscle. At

operation a cervical rib was found with a fibrous band extending from its tip to the first thoracic rib, pressing on the brachial nerves. On the day after the operation the anesthesia entirely disappeared; the motor power has not yet returned.

The second case is that of a female twenty-one years old, who has noticed a weakness in the right arm since she was seven years old. She ascribed this to carrying a heavy umbrella. Her arm was completely paralyzed for three months, and then slightly recovered. Two years ago the right hand began to waste, but it could be used for sewing until two weeks ago. On examination nothing was found except atrophy and weakness of the right hand. The pupils were equal. The extensors of the right forearm were weak, the strongest muscles being on the radial side. There was a definite disturbance of sensation along the ulnar border, reaching almost to the axilla, the patient being unable to distinguish between the head and point of a pin. Electrically, it was difficult to get any response except from the radial flexor. To summarize, there is a widespread paralysis of the forearm muscles supplied by the first thoracic, as well as by the eighth cervical and second thoracic. The diagnosis lies between (a) acute anterior poliomyelitis, (b) syringo-myelia, (c) and an acute lesion in the brachial plexus, due, perhaps, to hemorrhages, as suggested by Buzzard (Brain, 1902). The *x*-rays show, if not a rib, at least an enlarged transverse process extending from above the first thoracic vertebra.

The X-Rays at the Massachusetts General Hospital—Dr. Codman.—The results with the *x*-rays may be summarized as follows: Many disappointments; occasional success; much hope for the future. No patients are more zealous or more hopeful than those who come for *x*-ray treatment. The therapeutic *x*-ray work has had some remarkable results. Of the deep, malignant tumors treated thus, few have been improved, none cured, and some helped by softening of the growth, which was accompanied by a gain in the patient's weight. Of epitheliomata 100 have been healed or are healing. In April, 1902, Dr. Warren operated for cancer of the tongue, and in May the *x*-rays were started for prophylaxis, and were used until a dermatitis was set up, which prevented a further use. In a case of cancer of breast, which had seven spots of cutaneous recurrence, five of these were cured, and two are healing. Two cases of cancer of bones were unsuccessfully treated, one of the patients being eighty years old.

One year ago it was definitely stated that deep malignant growths could not be cured by *x*-rays unless they had reached the skin and caused ulceration. Three months ago, however, Dr. Warren operated for a sarcoma of the sterno-clavicular region. The pathological report of the tumor stated that it contained small round cells, with occasional muscle cells and much karyokinesis. It may, therefore, have been syphilitic, or a chronic inflammation. When first treated with the *x*-rays, however, there was a mass 5x2.5 cm. present; now absolutely nothing abnormal can be seen. Another case of sarcoma of the clavicle was made worse by the *x*-rays.

Lupus, psoriasis, and eczema have been healed as if by magic, although in some cases there has been recurrence elsewhere. There are many reasons for believing that the therapeutic effect of the *x*-rays is due to their stimulation of the nutrition of the parts involved rather than to their attacking the malignant growth. The chief reasons are (1) the action is very slow,

often not being manifested for weeks; (2) there is primary stimulation of the skin, evidence of which is seen in the expoliation hyperemia; (3) in a cancer there is frequently no destruction of the tumor, but a degeneration of its center; (4) the shrinking of the malignant cells may be due to the activity of the surrounding tissue; (5) as in the case of eczema due to varicosed veins, stimulation of the circulation causes healing; (6) the activity of the malignant cell is of a kind that would be helped rather than hindered by the stimulation.

Our method of treatment will depend upon the theory we adopt. My rule is to make exposures for ten minutes at a distance of ten inches twice a week until hyperemia appears, or until the end of the third week. Never allow a burn of the skin to occur. A dermatitis is usually caused in two weeks, it being usual to see a hyperemia after forty to one hundred minutes' total exposure at ten inches. Psoriasis and eczema disappear sooner. The epithelioma begins to be destroyed at the onset of the hyperemia. Great care must be taken not to destroy tissue, for there are already two cases on record in which cancer developed in the site of an *x*-ray burn. It seems probable that in certain cases of cancer of the breast the *x*-ray will bring great relief.

Dr. Halsted: In case of cuirass cancer Dr. Williams of Boston obtained very great improvement with the *x*-ray. In another case a cancer of the breast was evidently improved under treatment when a burn occurred. After several weeks, without treatment, the cancer disappeared, supporting Dr. Codman's theory that the therapeutic effect of the *x*-rays depends on stimulation of the nutrition. It seems possible that we may be wise in exposing a cancer of the breast to the *x*-rays directly after operation, perhaps while yet on the table.

Dr. Bloodgood: A case of epithelioma of the lip, 1x0.5 cm. in diameter, which had lasted one year, was treated with the *x*-rays, and, although there was no increase in its size for a year, still the superficial ulceration remained. The tumor was excised by Dr. Finney. It did not look like an epithelioma, and the microscope showed practically no epithelial invasion, but only granular tissue.

The Physics of the X-Rays—Professor Ames.—Many years ago Clerk Maxwell said that great light would be thrown on the nature of electrical waves by the study of discharges in vacuum tubes. Crookes made such a tube and demonstrated kathode rays. Roentgen of Wurzburg went further, and proved that (1) the radiations from vacuum tubes containing kathode rays have both photographic and electrical effects; (2) there is a radiation from any surface upon which the rays impinge; (3) the rays go in a straight line, and their penetrating power depends upon the atomic weight of a given subject. If a target be joined to the anode there is greater radiation.

Three men—Lehmann, Stokes, and Thompson—have recently contributed greatly to our knowledge of the rays. Thompson thought the disturbance was due to the discharge of minute bodies from the kathode, traveling, perhaps, at the rate of 60,000 miles a second. It has recently been shown that there is really no matter in motion, but only an electrical change. The *x*-rays are not waves, but irregular pulses, or rapid disturbances of the ether. To work for increasing length of spark is in the wrong direction. What is needed is to seek greater volume of current.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

SECTION IN CLINICAL MEDICINE AND SURGERY.

MEETING HELD FEBRUARY 6, 1903.

Case of Cretinism—Dr. Hirsh.—The patient was a girl five years old when brought to the Maryland University Hospital. Her uncle died of tuberculosis, one aunt died of goitre and two cousins were affected like the patient. Her father and mother are well. The patient herself was delivered with instruments, had her first tooth at eight months, but made no effort to stand or walk even when considerably more than a year old. On examination she was found to be dull, and even idiotic, the eyelids flat, the alae nasi dilated, the skin thick and dry, the teeth decaying, the canines and anterior molars being absent. There was a downy growth on the back. The abdomen was protuberant. Speech was indistinct, and the patient was unable to walk unaided. Thyroid treatment was commenced at once, the patient receiving half a grain at first and later two grains three times a day. Improvement was noticed in four weeks, at which time she could stand like a child of a year old. Three months later the skin had lost its harshness, the abdomen was less prominent, she had grown 5 cm., and her mental condition had markedly improved. At the present time—a year and a half since commencing treatment—she is like any other child of six years, having grown 22 cm. during that time, her mental improvement being the most striking thing. Her alae nasi are still dilated, but the presence of adenoids may partially account for this. The patient now receives nine grains of thyroid daily.

As is well known, there are three groups of cases pathologically: (a) Gland absent, (b) gland atrophied, (c) sporadic cretinism with goitre.

Dr. Osler: How far and how long should the treatment be continued? I had a recent visit from a case of sporadic cretinism whom I first saw ten years ago. The patient was then a child of three or four years. At that time she was a driveling idiot. She is now a girl of fourteen, well-grown and well-nourished. On one occasion the thyroid treatment was omitted for eight or nine months with very marked retrogression. Probably, as in cases of myxodema, the treatment must be lifelong. Some of the cases are doubtless cases of thyroid insufficiency.

Dr. Atkinson confirmed the opinion that the treatment had to be kept up constantly, and thought it would be best to give it every day.

Case of Multiple Sclerosis—Drs. Preston and Hirschberg.—Spiller reported ten cases of multiple sclerosis among 3000 cases of nervous diseases. At Bellevue Hospital, where 12,000 cases are treated each year, there are usually one or two of this disease. Sachs expresses the opinion that it is not as prevalent in Europe as generally thought. Of 126 cases reported in the literature, thirty-one had a former history of importance. The disease occurs most frequently between the ages of sixteen and forty-five; it is occasionally congenital. About one case in two years is the incidence of the disease at the City Hospital.

The present case is that of a male thirty-four years old, a fireman, who was admitted December 14, 1902, complaining of vertigo and nervousness. His mother died of cardiac disease, one brother of concussion of the brain, two of lead-poisoning. The patient has had typhoid fever, but no trouble with his eyes or speech, and no venereal or cutaneous diseases. Before the present illness he was a miner, using whiskey to excess, also gin and crude alcohol, as much as a pint a day of the latter, emptying for the purpose his miner's lamp. Seven years ago, while working in a mine, a heavy piece of slate fell on his head. He was unconscious for twelve hours and dazed for three weeks, being in bed all the time. For two years he was more or less dizzy, but was quite clear mentally. Then the dizziness began to increase, and was associated with headache and vertigo, increased by exertion. Two or three times a week he fell over during a dizzy turn, usually backwards. He was never unconscious. He feels a pressure like that of a vise on the back of his head and then a reeling sensation, and the ground seems to be pulled away from him. His hands seem thick and vision appears blurred, objects being seen double and triple; the knees and legs are weak, and the muscles stiff. His speech has been thick and more deliberate since the injury, and is worse during the attacks of dizziness, which last ten minutes longer if in a crowd. During the intervals he has a dull headache, but no vomiting. His head feels hot and swollen and he has to wear glasses for near-sightedness. He has difficulty in bringing a glass to his lips because of the swaying of his hands, especially the left hand. He walks unsteadily, fearing he will fall, as he is very apt to do if he turns rapidly. His fingers grow stiff when he writes, and the letters are irregularly formed. His memory is poor and he is absent-minded. He sleeps well, but has to rise several times for micturition each night. He finds himself laughing very easily at light thoughts passing through his mind, and at other times he has periods of uncontrollable pevishness and irritability without any cause. There has been no paresthesia, but occasional neuralgic pains in the legs. No shooting or girdle pains, no ulcers or other trophic disturbance. He is constipated.

On examination the patient answers intelligently, although not immediately. His memory is good for recent events only. In speaking he separates the syllables and jerks them out with irregular accent. There is a curious tremor of the tongue. There is no oscillatory nystagmus, but there is vertical nystagmus. There is left internal strabismus; no optic neuritis, or atrophy. There is a curious oscillatory tremor of the fingers when trying to touch his nose. This is worse in the left hand. The gait is jerky, but not paraplegic; he walks as if pitching against something, and almost falls is he moves rapidly. The knee-jerks are very active, the tendo Achilles reflex increased. No ankle clonus. No Babinski's reflex. His writing is fast and scratchy, but the tremor is fairly well controlled. There is a slight tremor, but no paralysis, of the vocal cords. The urine contains a trace of albumin, but no casts. His diplopia is quite marked.

Dr. Reuling suggests that this may have been a case of traumatic sclerosis In a recent case which he had seen there was scanning speech and ataxia. The patient had attacks of mutism, when for twelve to twenty-four hours he could not speak. He had also paresthesia on the same side as that of the injury. There was a central scotoma.

Dr. Osler: Bramwell recently commented on the greater frequency of multiple sclerosis in England than in the United States. In the National Hospital for the Paralyzed and Epileptics there are always three or four cases of the disease. It is not merely that the cases are overlooked in this country. We may mistake the disease for hysteria unless we have read Buzzard's article. The ordinary typical cases are very rare. I saw more cases in Montreal in ten years than here in thirteen.

Dr. Hirschberg stated, in conclusion, that the patient had been improving and had shown no signs of melancholia. The fact that the disease had lasted seven years pointed to its being organic.

Poisoning by the Castor-Oil Bean—Lieutenant Bispham.—While at a prison post in Cuba I was called one night and found two dozen prisoners all complaining of nausea and vomiting, none of them, however, seeming to be particularly ill. Three of the cases may be mentioned in detail.

The first was admitted to the hospital on January 6, having eaten fourteen beans on the evening of January 4. He felt sick after supper and became nauseated and vomited; at 10 he had cramps in the region of the liver and in the limbs all night. Temperature 99°, pulse 70, urine normal. The treatment consisted of hot-water bottles and morphine. Recovery in three days.

The second patient entered on January 5, having eaten six beans the day before and having had no symptoms for nearly twenty-four hours, when he had nausea and headache. Temperature and pulse were as in the first case. Recovery was uneventful.

The third patient ate one bean on January 4, and was taken sick at 9 P. M. with severe vomiting and purging. His urine had a specific gravity of 1026 and an increase in sulphates. Temperature 97.5°. Treatment with morphine and atrophine; rapid recovery.

It is interesting to note that the man who ate fourteen beans was very slightly affected, while the one who had eaten one became almost comatose, and could give no account of himself, and had to be carried in. One of the officers was similarly taken ill four hours after eating four beans. He had vomiting and purging, and a trace of albumin in the urine. Temperature 98°; he recovered in three days.

On examination it was found that the three prisoners, with several others, had been cutting weeds on January 4. They cut down a lot of the *Ricinus communis*. One of the men collected the beans and shared them with the three prisoners. They tasted like English walnuts. The man who collected them and a sergeant who ate a hundred were only slightly purged, but not really made ill. There was evidently a marked difference in the individual susceptibility to the poison.

Very few cases of this form of poisoning are reported in the literature. In the *British Medical Journal* for 1901 a fatal case, after taking two beans, is recorded. Dr. Winslow had a case at the University Hospital. The patient was a boy of fifteen, who ate ten or twelve, and was seized with vomiting. The bowels became very constipated. The patient had a dry tongue, rapid pulse and a mottled, livid skin, and seemed very ill. Calomel had no effect. Cocaine was given and the food stopped in order to check vomiting. There was delirium, and the temperature was subnormal until near the end, when it had risen to 104°. At this time there was profuse diarrhea. The patient died on the twelfth day, evidently from cardiac

exhaustion. The urine showed a few hyaline casts. It has not been possible to determine the amount of ricin present in each bean.

Dr. Winslow remarked on the striking condition of the skin in his patient, it being pink at times and then purple, evidently because of sluggish circulation.

Dr. Thayer: Ricin is in many ways similar to the toxin of diphtheria, and animals may be similarly immunized against it. Is it not possible that those of Lieutenant Bispham's cases which escaped serious effects may have previously eaten the beans? On the other hand, they may have had natural immunity.

Dr. Ruhräh: It may also be possible that the man who ate many of the beans had a profuse and early diarrhea and thus excreted most of the poison.

Lieutenant Bispham replied that the man had not severe diarrhea. As to whether they had previously eaten of the beans, he did not question them on that point.

Book Reviews.

A Text-Book of Legal Medicine and Toxicology. Edited by Frederick Peterson, M.D., Chief of Clinic, Nervous Department of the College of Physicians and Surgeons, New York, and Walter S. Haines, M.D., Professor of Chemistry, Pharmacy, and Toxicology, Rush Medical College, in affiliation with the University of Chicago. Two imperial octavo volumes of about 750 pages each, fully illustrated. Per volume, cloth, $5 net; sheep or half morocco, $6 net. Philadelphia, New York and London: W. B. Saunders & Co. 1903.

Among the contributors to the work of Peterson and Haines we note many who are considered an authority in his respective field. The work is divided into two volumes. The volume before us, Part I, deals with the medico-legal part of the subject. We are much pleased with the general appearance of the book as well as with the arrangement of the contents. Both lawyer and physician may read the introductory chapter on expert evidence with a great deal of profit, and by following the advice given may be spared much embarrassment at a critical moment.

We find much to recommend in each chapter, but those which showed out most prominently are the Technic of Medico-Legal Examination by Hektoen, the Medical Jurisprudence of Life Insurance by Armstrong, and Insanity by Eskridge. The systematic registration of criminals by Bertillion and Galton system is explained in some detail.

The condition of the body in death from hanging, suicide, electricity, poisons, and injuries is discussed in an interesting manner. Many cases of interest to the criminologist are cited. A few lithographic plates and many figures add much to the value of the book.

We look forward with much interest to the second part of the work, and if it maintains the standard set by the present volume, we would not hesitate to say that it is the most complete work of its kind on the market. H.

THE PREVENTION OF DISEASE. Translated from the German, with an introduction by H. Timbrell Bulstrode, M.A., M.D., D.P.H. In two volumes. Cloth, pp. 1063; net price $3.75 per volume. New York: Funk & Wagnalls Company.

The scope and purpose of this work are admirably summarized in the introduction by H. Timbrell Bulstrode. He says: "Its object is the development of individual prophylaxis. It is, as far as I am aware, the first attempt which has been made to view human disease in its entirety, whether communicable or not, from the standpoint of preventive medicine, in the more comprehensive sense of the term." The book is not especially one for health officers, though these may read it with satisfaction, and may realize in reading how comparatively small a relation their practical operations bear to the whole scope of preventive medicine.

The book is particularly addressed to practicing physicians, and it supplies a real need. For the surgeon, the obstetrician, the laryngologist, the ophthalmologist, the alienist—indeed, for every specialist—there is at least one chapter in the book which will broaden and strengthen one's views of the responsibilities of medical practice.

With the acquisition of some rather precise knowledge about cells and of a long-distance acquaintance with a few hypothetical substances we have in these latter days gotten quite an opinion of ourselves. Very likely our grandfathers would admire us, but the old worthies might possibly consider us a little bumptious. It is not quite certain that with fresh handfuls of knowledge we have strengthened our hold upon wisdom.

To "view human disease in its entirety" ought to be a less difficult proposition today than at any earlier day, and if a comfortable visual angle can be obtained at any viewpoint, preventive medicine is probably that point of view.

The purpose of the book was perhaps not originally so ambitious as its English sponsor would lead us to believe, but Dr. Bulstrode's characterization is just nevertheless.

The book is in two volumes, containing twenty-one chapters by seventeen different authors. Each of the contributors is an authority on the subject of which he treats. A certain amount of repetition is inevitable in such a work, but each of the articles is in itself a well-rounded monograph.

THE DIAGNOSTICS OF INTERNAL MEDICINE. By G. R. Butler, A.M., M.D. New York and London: D. Appleton & Co.; Baltimore: Medical & Standard Book Co. 1903.

This book, written from the point of view of practical clinical work, is made up of two parts—first, a study of symptoms and their indications; second, a study of diseases and their characteristics. The book is practically but a summary of the views held regarding these two points, but is of especial value because of the interesting diagrams and charts with which it is filled, illustrating graphically many things which otherwise might seriously confuse the student. Especially valuable are the charts in reference to the normal and pathological conditions of the cardio-vascular system. The illustrations are very good, and the book, while containing nothing especially new, should prove of distinct help to the medical student. B.

THERAPEUTICS OF DRY HOT AIR. By Clarence Edward Skinner, M.D., LL.D., New Haven, Conn., Professor of Thermotherapy in the New York School of Physical Therapeutics; Editor of the Department of Thermotherapy in the *Journal of Advanced Therapeutics;* Physician in charge of the Newhope Hot Air Sanitarium, New Haven, Conn.; Member of the American Medical Association, American Electrotherapeutic Association, American Roentgen Ray Society, American Association for the Advancement of Science, Yale Medical Alumni Association, etc. 200 pages, substantially bound in cloth; price $2. New York: A. L. Chatterton & Co.

In this interesting little book the subject of the therapeutics of dry hot air is discussed by Skinner, who in his preface states that "when skilfully administered it is one of the most potent and useful agents at our command, and applicable to many diseased conditions wherein the ordinary method of treatment are satisfactory. It is simply a rational therapeutical agent, which alone or in combination with other remedial agents will increase greatly our power to overcome pathological processes." First, the various forms of apparatus are discussed, next the physiological action, and next, at considerable length, the technique of treatment. The various diseases are then taken up in which the use of hot air has proven beneficial, these including rheumatism, sciatica, sprains, arthritis deformans, nephritis, local septic infection, pneumonia, peritonitis, pleuritis and synovitis, lithemia, neuralgia, myalgia, varicose ulcers, nervous debility and exhaustion, neuritis, chronic bronchitis, pulmonary tuberculosis, and fibrous anchylosis. B.

AMERICAN EDITION OF NOTHNAGEL'S PRACTICE: DISEASES OF THE PANCREAS, DISEASES OF THE SUPRARENAL CAPSULES, AND DISEASES OF THE LIVER. By Drs. L. Oser and E. Neusser of Vienna, and Drs. H. Quincke and G. Hoppe-Seyler of Kiel. The entire volume edited, with additions, by Frederick A. Packard, M.D., late Physician to the Pennsylvania and to the Children's Hospitals, Philadelphia, and Reginald H. Fitz, M.D., Hersey Professor of the Theory and Practice of Physic, Harvard University Medical School, Boston. Handsome octavo volume of 918 pages, illustrated. Cloth, $5 net; half morocco, $6 net. Philadelphia, New York and London: W. B. Saunders & Co. 1903.

This volume is a fitting companion to the one which preceded it in the same series, Riegel's "Diseases of the Stomach." Diseases of the pancreas are first discussed by Dr. Oser in a most able and satisfactory manner, and the fact that 270 pages have been devoted to this subject shows how completely it is treated. Dr. Zuckerkandl contributes an interesting chapter on the anatomy of the pancreas. A short article on the diseases of the suprarenal capsules by Neusser follows, more than half of which is given up to a discussion of Addison's disease. The last 500 pages of the book are taken up by Quincke and Hoppe-Seyler's article on diseases of the liver, which is complete, conservative, and satisfactory in every respect. A number of additions have been made by the American editors of the work, and Opie's notable articles on pancreatitis and the relation of gallstones to changes in the pancreas have been considered in full. The book is one of the most interesting of the series which has as yet appeared. B.

A Treatise on Massage—Its History, Mode of Application, and Effects; Indications and Contraindications. By Douglas Graham, M.D., Boston, Mass. Third edition. Philadelphia and London: J. B. Lippincott & Co. 1902.

In this third edition of Graham's well-known book on massage many additions and alterations have been made, and eight new chapters have been added. The book is written from the standpoint of the physician and practical *masseur*, that is, from the combined point of view of the theoretical and practical. The subject is very thoroughly considered. Among the chapters of especial interest may be mentioned those on the history of massage, the physiological effects of massage, massage in neurasthenia and local massage for local neurasthenia, and the effect of massage in a large number of important diseases—diseases of the heart and of the lungs, atony of the stomach and intestines, diseases of the central nervous system, writers' cramp, neuralgia and peripheral paralysis, muscular rheumatism and neuritis, lateral curvature of the spine and various other conditions coming under the care of the orthopedist, sprains, bruises, dislocations and other results of trauma, various joint affections, and gout. The book is well written and copiously illustrated, and presents a quite thorough summary of the subject, although, of course, written from the point of view of the enthusiast. B.

The International Text-Book of Surgery. By American and British Authors. Edited by T. Collins Warren and A. Pearce Gould. Second edition, thoroughly revised. Volumes I and II. Philadelphia, New York and London: W. B. Saunders & Co. 1902.

A second edition of this excellent work has been necessary in order to keep abreast of the rapid progress made in almost every department of surgery since the appearance of the work, about two years ago. This has given the editors a chance to correct many of the slight errors in the text of the first edition. The valuable experience in military and naval surgery resulting from the Spanish-American War and the war in South Africa has been incorporated in the chapters on Military and Naval Surgery. Other portions of the work have been extensively revised and brought up-to-date.

By being kept up-to-date this work will continue to hold a leading place among the more recent text-books on surgery. It is one of the best short treatises on surgery which we have seen. Y.

The Standard Medical Manual. By Alfred S. Burdick, M.D. Chicago: G. B. Engelhard & Co. 1901.

In this book the author arranges in alphabetical order the various diseases, and gives the result of the recent work, collected from a mass of collateral medical literature, which he has used in connection with his editorship of the *Medical Standard*. Etiology, pathology, and symptomatology are considered very briefly, and most of the space is devoted to a consideration of the treatment of the various disorders. In this way most of the diseases in general medicine and in the specialties are considered; but while the book may be of peculiar help to medical students in the preparation for their final examinations, it is peculiarly uninteresting to the real student of medicine. B.

MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

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BALTIMORE, JULY, 1903

PLAGUE AS AN IMPLEMENT OF WARFARE.

THE Macedonian revolutionary leaders are reported to have issued a manifesto in which they threaten a most appalling conclusion to their contest for independence. They promise to perish of plague and to include great numbers of their oppressors in this amiable program. They are said to possess a great quantity of plague bacilli with which they intend to start the pestilence at Salonica and Constantinople.

To smite the enemy with a pestilence is not quite a novel proposition, but there is no modern instance of the effective use of infectious agents in warfare. If the experiment should be made, the results would perhaps be of scientific interest, but the performers and the press correspondents would probably be disappointed. Indeed, it would not be very shocking to wish that the thing might be tried. If experts were engaged on both sides in such a war, the proceedings would perhaps be but little more exciting than a duel with baked potatoes. The Macedonians are evidently not experts, or they would not have proclaimed their intention before they had cornered the plague market. After having been Haffkinized and secured exclusive possession of all the available pest bacilli, their manifesto would have commanded great respect. But since their program has been prematurely announced, Constantinople can easily prepare to suppress all the plague that will occur by simply engaging a San Francisco editor.

It is our serious opinion that the revolutionists can do less work in more time by using pest bacillus than they could do by plain imprecations. If, however, they are bent on utilizing a microbe, good results might be expected from a national festival after the fashion of the American Fourth of July. But for a conclusive biological argument an organism should be selected which can be most easily conveyed and will most certainly attack the human body wherever it lands. The one organism which possesses these qualifications is the itch mite.

ACCIDENTAL PLAGUE.

When lodged in the human body the pest bacillus has energy enough to satisfy the demands of the most savage warfare. The Austrian government recently sent to the Bacteriological Institute of Berlin a young Viennese physician, Dr. Milan Sachs, to perfect there his preparation for important sanitary work. While injecting culture of plague bacillus into a rat Dr. Sachs wounded his own hand with the inoculating needle. He sickened with plague and died after three days' illness. His nurse also became infected, but at last accounts was expected to recover. The nurse was a vigorous young man, but Dr. Sachs is reported to have had a light tuberculosis infection.

Two or three years ago two deaths resulted in Berlin from a similar accident. Another case was reported from Spain, and in our own country a student at Ann Arbor became infected by breaking a culture flask containing plague bacillus. Death did not result in this instance. A good many directors of bacteriological laboratories destroyed all their pest cultures shortly after these accidents occurred.

It is said that the authorities will prohibit in future all experiments with plague bacillus in Berlin, holding that the dangers to public health outweigh the probable profits of experimental work with the bacillus.

This ground of objection does not seem well taken. There is no evidence that the general public has been in the slightest degree endangered by any of the reported accidents. The hazard involved only the laboratory workers. All work with deadly organisms should be hedged about with defenses, and such infective agents as the pest bacillus should be employed only in special laboratories under particular restrictions. The dangerous character of such work is fully understood by those who engage in it, and every protection should be afforded them, but such work should not be wholly interdicted. The plague bacillus furnishes its own antidotes in a vaccine and a curative serum. These agents do not bear transportation very well, and when needed the demand for them is extremely urgent.

The preparation of these substances is a dangerous occupation, but necessary, even indispensable, and one which strongly attracts scientific men. Berlin might experience a situation in which the services of such men would be valued above all price.

Such accidents as that just reported from Berlin suggest that students of plague ought to be immunized against the disease. The danger of wounding oneself with laboratory apparatus is ever present; it is inherent in the nature of laboratory methods and materials, and cannot be wholly averted by the most expert skill and carefulness. At Ann Arbor the life of the plague-stricken student was saved by the use of serum prepared from the same

stock which furnished the infection. It is not reported that the young man had been immunized, though a quantity of Haffkine's immunizing fluid had been prepared, the plague bacillus having been brought from San Francisco to Ann Arbor for that purpose.

In 1900 and 1901 the United States Marine Hospital surgeons on plague duty at San Francisco were Haffkinized. By this means the accidents at Ann Arbor and at Berlin might have been cheated of their alarming consequences. Hardly anything could be more unfortunate for the future of preventive medicine than for the popular mind to be strongly impressed that infectious-disease laboratories are menaces to public safety.

TYPHOID AND BLANKETS.

An outbreak of typhoid fever occurred in April on the British training ship Cornwall lying at Purfleet. The sanitary authority of the port of London undertook an investigation, and after failure to explain the occurrence by any of the ordinary modes of infection, were attracted by suspicious stains on some of the blankets which had been recently purchased and put into use on the ship. Professor Klein cultivated typhoid bacillus from these stains. On further inquiry it was learned that the blankets were a small part of a very large consignment of army blankets, new and old, purchased in South Africa. At a warehouse in Whitechapel forty tons of these blankets were found, and, according to a statement made in a parliamentary inquiry, living virulent typhoid bacilli were found in some of these blankets also. The sanitary authorities moved with great promptness. Notices were sent to all places where it could be ascertained that such blankets had been sent, and wherever found they were seized and disinfected. A good many had been sold to the public, but no typhoid has been traced to their use elsewhere than on the ship Cornwall.

Up to the present time the War Office has not furnished a satisfactory explanation of the appearance on the home market of so great a quantity of condemned army blankets. A general order of two years' standing forbids the sale in South Africa or the shipment home of any textile fabric which had been used in an infections disease. The ordnance regulations require condemned blankets to be torn in four pieces in order to destroy them as blankets. Plausible evidence is offered to show that none of these were hospital blankets and interesting theories are advanced concerning the manner of their infection. The fact of their infection is not disputed, and quite a little breeze of scandal has been furnished by the episode.

The occurrence is of interest as illustrating the liability of typhoid bacillus in textile fabrics and as an example of the characteristic thoroughness of sanitary operations of our cousins over the sea.

Correspondence.

To the Editor of the Maryland Medical Journal:

My Dear Sir—Permit me, through your columns, to call attention to a most important project set on foot at the late meeting of the Medical and Chirurgical Faculty of Maryland. This is the creation of a permanent "Fund for the Relief of Widows and Orphans of Deceased Members." Such a charity within our State organization has been contemplated for many years, as will be seen by reference to the "Medical Annals," but the energy to make it a success seems on every occasion when it has been proposed to have been lacking, and consequently the suggestion got no further than the resolution stage. We hope to do better, and during the coming year to gather together at least $1000 to serve as the nucleus for a much larger fund in the future. The principal of the fund will be held in trust by the Board, and only the interest used for the relief of our beneficiaries.

It is needless to point out how urgently such relief is called for. Everyone knows how often the good physician devotes his life to the relief of suffering humanity, and, when he comes to die, leaves those dependent upon him to the cold charity of the world. I could cite instances where men of the highest standing in the profession, physicians of national reputation, have been buried in this State by the contributions of their professional brethren. How much better to make permanent provision for emergencies of this sort!

I invoke the interest of our members in this project, and will be glad to receive contributions to it. I hope also that those who have means will remember it in their wills by bequests of such amounts as their possessions and the claims of kindred will justify. Yours respectfully,

EUGENE F. CORDELL, M.D.,

President Medical and Chirurgical Faculty of Maryland.

855 North Eutaw street,

Baltimore, May 28, 1903.

Medical Items.

A NEW cure for cancer—m-o-l-a-s-s-e-s.

PITTSBURG had ten deaths in June from the sort of tetanus which is due after July 4.

FOURTH OF JULY tetanus has already appeared in Chicago. Seven fatal cases of tetanus caused by firearms and toy pistols had occurred before the middle of June.

AMONG the medical men from Baltimore now over seas are Drs. Wm. Osler, H. Burton Jacobs, Wm. Lee Howard, L. McLane Tiffany, H. E. Peterman, and James Bordley, Jr.

DR. EDWARD MARTIN, director of the Department of Health and Charities of Philadelphia, has determined to place tuberculosis upon the list of notifiable diseases. Baltimore next?

THE second ward of the Phipps Institute for the Study, Cure, and Prevention of Tuberculosis has been opened. Nearly a thousand patients have been treated in the four months since the temporary institute was opened.

DR. FRANCIS T. MILES has resigned the chair of physiology and neurology in the University of Maryland. Dr. John C. Hemmeter has accepted the chair of physiology, and will retain the professorship of gastroenterology.

IN Montreal on Sunday, May 17, many of the prominent physicians occupied the pulpits in the city churches and addressed the people on the prevention of tuberculosis. Prof. J. George Adami preached at the Church of the Messiah.

ON June 5 Dr. Milan Sachs, a young Viennese physician, died of plague accidentally contracted in the Bacteriological Institute of Berlin, where he had been sent by the Austrian government to make some researches in preparation for public-health work.

THE Dutch ship Amsterdam, bound from Java to Philadelphia, arrived at Lewes, Del., about June 12 with a number of cases of beriberi among the ship's company. Those affected were removed to the United States Marine Hospital at Lewes.

THE Health Department of New York city proposes to extend the list of notifiable diseases. The most important addition to the list is puerperal septicemia. It is not generally known that a State law requires midwives to report the occurrence of fever in childbed.

The Health Department of New York city has discovered that quite a number of physicians who have been obtaining free antitoxin on their certificate that their patients were unable to buy antitoxin have been selling the city's gives at $5 to $10 a dose. We are not advised that there is any way of dealing fairly with the scandal.

An interne in the French Hospital, New York, is down with smallpox—Dr. Clinton B. Knapp. A case of variola occurred in the hospital, and, excepting Dr. Knapp, every person exposed was revaccinated. Dr. Knapp neglected to be vaccinated, believing that the protection from his one successful vaccination was sufficient.

The Health Department of Philadelphia proposes to establish in Fairmount Park summer sanatoria for cases of incipient consumption occurring among the children in tenement-houses. The aid of charitable societies will be sought, the Health Department simply exercising a general supervision of the work. The Red Cross Society has offered to furnish twenty-five nurses.

In Chicago the health authorities are warning citizens that scarlet fever, diphtheria, and other infections may be carried by cats and other pets. In Philadelphia the health authorities believe that rats which infest the municipal hospital have conveyed smallpox into nearby houses. In the week ending June 13 thirty-three cases of smallpox occurred in the two wards contiguous to the municipal hospital.

On June 3 the first annual conference of State health officers with the United States Public Health and Marine Hospital Service was held at the New Willard Hotel in Washington. Twenty-two States were represented—California, Connecticut, Delaware, Florida, Illinois, Iowa, Kentucky, Louisiana, Maine, Michigan, Maryland, Minnesota, Mississippi, Missouri, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Utah, West Virginia, District of Columbia.

The German central committee for the erection of sanatoria for tuberculosis consists of 1300 members. Among them are 83 physicians, 6 government ministers, 24 insurance companies, 159 government employes, 344 merchants and manufacturers, 39 business houses, and 4 boards of trade. There are now 74 sanatoria, and 30,000 patients were treated in the past year. Of this number 80 per cent. were returned to active life practically cured. The duration of the stay in sanatorium averaged seventy-nine days.

In Brownsville, Tenn., Dr. John Sevier had been for some time annoyed by unknown persons who nailed threatening notes upon his door and committed other depredations. On the night of June 8 Dr. Sevier kept watch for the miscreants. Toward morning a man approached the door and was challenged by Dr. Sevier. The challenge was not heeded, and Dr. Sevier fired upon the assumed marauder. The victim turned out to be a friend coming upon a business errand. The man was not severely injured.

On June 20 appeared the first issue of the *New York Medical Journal and the Philadelphia Medical Journal, Consolidated.* The publishers' announcement sounds very much as if the amalgamation of these two weeklies is but a step toward the formation of a medical-journal trust. It is in line, they say, "with the most conspicuous tendency of the present time in the conduct of great enterprises—that of amalgamation." The central office will be at 66 West Broadway, New York, with branch offices in Philadelphia and Chicago. The news of the approaching consolidation has been in the air for some time.

At a conference of the officers and advisory committee of the American Congress on Tuberculosis, held in New Orleans May 7, some important changes were made in the plans as previously announced. The previous plans of the council to hold the congress in St. Louis in 1904 were changed, many considerations favoring Washington, D. C., as the place of meeting. A change of time of meeting was also made to April 4, 5, and 6, 1905. As there is to be an International Congress on Tuberculosis at Paris in 1904, it was deemed possible that some foreign delegates might be prevented from attending the Washington meeting on that account. The committee in charge of the section on pathology and bacteriology is as follows: Dr. Simon Flexner, chairman; Dr. William H. Welch, Dr. George J. Adami, Dr. Theobald Smith, and Dr. F. F. Westbrook. Dr. George Brown of Atlanta, Ga., is the executive officer of the congress, and all who desire to present papers before the congress should apply to him. Any circulars or communications purporting to be in the interests of the American Congress on Tuberculosis which do not appear over the name of Dr. George Brown as secretary do not relate to the congress which was arranged last year, and the organization of which has already so far advanced as to insure its success from every point of view.

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THE ORIGIN, PURPOSE AND WORKING METHODS OF THE MEDICAL MILK COMMISSION.

By Henry L. Coit, M.D.,
Newark, N. J.

PAPER READ AT A MEETING HELD BY THE PEDIATRIC CLUB OF BALTIMORE, MD., MAY 21, 1903.

It is not my purpose to discuss the commercial relations of milk, nor its importance in the diet of the sick, nor its clinical requirements, except as its absolute purity is essential to the successful work of the physician.

Nor can I more than refer to the present-day problem of the inability of the race to nourish its young, and the relation of milk to this maternal failure, which is either partial or complete in 50 or 60 per cent. of modern mothers.

Nor is it possible to dwell at length upon the close relation of impure milk to infant mortality, although this aspect of the milk question alone justifies all the attention given to it by physicians.

In fifty large cities 50,000 tiny human beings die annually, designed by nature to live, born with vigorous powers, capable of robust and unretarded development; but lo! their natural food, for reasons yet unknown, is denied them, and they become the victims of the merciless conditions of starvation and ignorance.

Science is about to conclude that the accidental impurities in milk are among the greatest causes of death to mankind. There is no portion of the general food supply which requires more careful supervision. Milk is a delicate animal fluid highly sensitive to exposure and easily spoils unless it receives great care, and its purity and safe transfer to the individual is of equal importance to that of a pure water supply.

It is difficult to understand why the cow, so completely employed for human food, should receive relatively so little care, while other domestic animals are so cautiously guarded, carefully

groomed and comfortably housed. The cow is the only animal which is largely fed on refuse materials and waste by-products from manufactories. The injurious and fatal consequences of this state of things, in the light of the fact that she herself is highly susceptible to disease, are too apparent to require comment.

It is therefore our duty as sanitarians to guard religiously the sources of milk, and endeavor to establish safeguards against the possibility of dangers.

DEFECTS OF ORDINARY METHODS OF PROCEDURE.

Every ordinary method thus far employed for producing and distributing milk on a large scale reveals serious defects, and cannot be trusted to yield a product suitable for use in the sick room or for the diet of the young infant.

Gathered milk, so-called, represents the larger portion of milk brought to the cities. This is mostly milk of a low grade, and needs only to pass the lactometer test of the inspector at the depot or the casual test of the city chemist in order to fulfil the scanty requirements of the law.

Much of the gathered milk collected and distributed by dealers is brought to the creamery by the small farmer in a 40-quart can; it is drawn the night before from the cow, herself unclean, under a dusty hay mow in an open pail, the cow's hide soiled, perchance, by the bedding of dried horse manure, milked with unwashed hands, grimy with the farm work of the day, aerated in an odoriferous barnyard and cooled in a well, dragged through the sun, mixed with a hundred such fragments, bottled by machinery and transported from fifty to one hundred miles by railroad, and sold with a profit to the farmer, when he has sold his calves, at two and one-half cents per quart, with a profit to the creamery, a profit to the railroad, a profit to the middleman and a profit to the small dealer, and all accomplished within thirty-six hours after it is drawn—a profit to all except the hapless infant and the helpless mother, who, instead of profit, sustain a loss.

Legislation has heretofore been trusted in regulating this matter, but I believe that neither State legislation nor the ordinances of a municipal board of health can secure to us what we require. These influences are too remote from the thing desired, the scope of their demands too limited, and their standards too low. They cannot be identified very closely with actual dairy work, except through paid officers, who, as employés of the law, act as policemen, and do not stimulate the best efforts of those to whom we must look for what we need. Furthermore, it will probably always be true that legislation in the nature of things is inefficient in regulating the details of special kinds of work.

An ordinance in its letter may require an article of food to be clean, but how it shall be made clean it cannot define. The law may fix a standard of cleanliness and purity, but it cannot determine the exact method whereby this standard may be attained.

In order that the law may be a means to this end, it must determine by a code what constitutes a clean milker's hand, a clean udder, a clean pail, a sterile container, what constitutes a healthy cow, a safe workman, good feed and fodder or suitable bedding or proper housing—these the law never has and probably never will obtain for us.

PHYSICIANS ARE THE BEST SUPERVISORS OF MILK PRODUCTION.

It is my privilege to discuss the important relations of the physician to the initial and essential steps necessary if this article so much valued and so indispensable to his success is to be obtained pure and clean.

It is difficult to harmonize the fact that in the realm of preventive medicine the physician not only fulfills his obligation to discover the means for prevention, but finds it necessary himself to institute and conduct the crusade against evils which menace human life.

This results from the unfortunate conditions which are universal, namely, a public lax and indifferent with reference to the vital interests of their health, and legislative bodies, apparently helpless when their dictum runs counter to powerful commercial institutions.

The physician is the best supervisor of milk production intended for his own uses, because of his ability to apprehend danger, because he is more generally informed concerning the origin, nature and sources of those conditions inimical to human life; as touching the duty of physicians in this matter, there can be no question; he is the proper custodian and the best judge of matters affecting the public health, and his knowledge equips him with the most effective means of warfare against evils of this class.

PLAN TO PROCURE COWS' MILK DESIGNED FOR CLINICAL PURPOSES.

In order to obtain clean and pure milk, we must engage in its actual supervision the very best expert judgment on cleanliness and prophylaxis. The true springs of cleanliness are in the thought, before we can have actual or effective cleanliness in the surroundings. Soap, water, scrubbing brush, sunshine and disinfectants are of no avail without the thought, which effectively employs them.

We must also engage the very best expert judgment on dairy farming in all its relations. This calls into service the dairyman,

the chemist and the veterinarian, who may determine the productiveness of lands, health of stock, results of feeding, cost and value of product, economical employment of labor and detail in handling the product.

The proper collection and handling of milk, in order to obtain it in the highest state of purity, must therefore be an educational process, occupying the best thought and engaging the best service of all concerned in its production.

I desire to call your attention to a brief history of a plan to procure cows' milk designed for clinical purposes.

"Certified milk" is a term employed to designate cows' milk of a particular grade of purity It was first used in connection with a plan brought to the attention of physicians, and finally put in operation in Essex county, New Jersey, in 1893.

The plan had its origin in 1889, when, coincident with the introduction of the more scientific methods of infant feeding, the great difficulty of obtaining cows' milk of a uniform high standard was brought forcibly to the attention of the writer.

An effort was made at this time to obtain relief by legislative enactment which would allow the employment of State funds to correct the current injurious practices at the sources of milk supply. But after two years of diligent labor through the Medical Society of New Jersey, very little was accomplished except to awaken a general interest in the subject and to establish the conviction that the profession had an important duty to perform.

It was found that the clinical aspects of this question appealed so strongly to physicians that their co-operation in any properly organized effort to secure reform was assured. Accordingly in January, 1893, a plan was presented to the Practitioners' Club, a leading medical society of Newark, which met with their unqualified endorsement. The plan was without precedent known to its author, and was at once submitted for approval to Prof. T. Mitchell Prudden, Prof. Albert R. Leeds and Prof. Alexander Liautard, all of whom were later identified with its development.

It provided for a commission of medical men, who, with the support of physicians generally, should endeavor to influence a supply of milk produced under regulations imposed by themselves.

It was considered essential to success that the commercial interests of the dairyman should not be ignored in the attempt to secure the purely scientific objects of the commission. It was proposed that an approved dairyman possessing honor, financial ability and dairy facilities be induced, by reason of promised medical support and the increased price of the milk, to conduct his dairy in conformity with a contract made with the commission in due legal form.

That the commission establish correct clinical standards of purity for cows' milk; become responsible for a periodical inspection of the dairy under their patronage; provide for bi-monthly examinations of the product by a chemist, a bacteriologist, and likewise frequent scrutiny of the stock by competent veterinarians.

By the employment of well-known experts in these three departments it was hoped to establish a reliable safeguard against the common dangers of contaminated and impoverished milk.

This commission proceeds on the supposition that the combination of a purely commercial institution with those whose objects are purely scientific is not impossible. Its purpose is chiefly to influence the production and proper handling of milk intended for clinical purposes, which it seeks to accomplish by a rigid legal supervision of methods imposed upon a reliable dairyman.

The legal requirements are stringent and binding. The code includes ample sureties for its fulfilment—necessary forfeiture clauses, a territorial limit for the sale of the product, and provision for the compensation of the experts employed by the commission.

It controls the character of the land used for pasturage and the cultivation of fodder; determines the construction, location, ventilation, and drainage of buildings; provides for an abundant and pure water supply, and prevents the use of water from wells or springs holding surface drainage.

It requires in the stable cleanliness and order, and disallows the keeping of any live-stock, except the cow, within 300 yards of the dairy buildings.

It regulates the assortment of the herd with reference to uniform results, as well as the health, the consanguinity, the breed, and temperament of the animals.

It excludes any that are judged by a competent observer to be tuberculous or are found in a state of health prejudicial to the herd. It forbids the use of phenomenal milkers, provides for proper housing and shelter of the animals, together with their grooming, their treatment, and the prompt removal of their waste from the stable.

It regulates the feeding with reference to uniformity in the chemical composition of the product, and restrains the use of all questionable or exhausted materials for food. It governs the collection and handling of the milk by insisting upon a proper regard for cleanliness as viewed by the bacteriologist as it relates to the animal, her surroundings, the milkers' hands, the vessels, and the association of persons handling the milk with immediate or remote sources of infection.

It controls by minute specified requirements every step in the cooling of the milk and its preparation for shipment, and adds to the product every detail of care known to promote its keeping qualities or favor its safe transportation.

The motives of the commission are disinterested and its members forbid to themselves any pecuniary rewards. The experts are employed by the commission and paid by the dairyman. The bi-monthly reports of these officers to the commission are the basis of their approval of the product, which, in the form of a certificate, acquires commercial value to the dairyman.

Duplicate printed copies of the certificates are used only for the information of the physicians in the localities where the milk is sold.

Certified milk, being designed for clinical purposes, is subject to the following restriction in its sale, namely: that when at any time the demand exceeds the supply and the milk is required by a physician, the holder of a physician's order is a preferred purchaser. Thus far this work has been largely educational and experimental, and yet it has not been without some measure of practical results as respects the superior quality of the milk obtained, the approximation to the standards adopted, and the benefits derived from its use in the dietetic management of the sick.

It is highly desirable that this work should be done in every large center of population, and that there should be some uniformity of requirements for high-class milk designed for sick-room purposes.

This could easily be accomplished by a central commission made up of a representative from each organization in the large cities where such work is carried on.

PROPER CLINICAL STANDARDS OF PURITY FOR COWS' MILK.

In order to meet the clinical requirements of cows' milk in the present state of our knowledge three conditions of purity must be fulfilled. These requirements were formulated in 1892 by the writer in connection with the organization of the foregoing plan. They need only to be stated in this connection:

"First—An absence of large numbers of micro-organisms and the entire freedom of the milk from the pathogenic varieties.

"Second—Unvarying resistance to early fermentative changes in the milk, so that it may be kept under ordinary conditions without extraordinary care.

"Third—A constant nutritive value of known chemical composition and a uniform relation between the percentages of the fats, proteids, and the carbohydrates."

RESULTS OF THE PLAN TO CERTIFY MILK AS SHOWN BY TEN YEARS' WORK.

These are scientific or professional and commercial. It has been found possible to combine two widely diverse interests to effect a public good, and that a purely professional scheme may work harmoniously with and influence a commercial institution.

This was seen in the recent effort of a syndicate to capitalize the dairy, absorb its business with $2,000,000, and make the dairy-

man an independent manager for life. But when he found that the commission would not deal with a corporation, he withdrew from their overtures, stating that he would rather lose this immediate financial advantage than the support of the doctors.

The influence of this single initial effort in one section of the country upon milk production in general cannot be gainsaid. This high-grade object-lesson not only had the effect of revolutionizing methods in its immediate neighborhood, but it has unquestionably influenced many important efforts to obtain pure milk throughout the country.

As an illustration of its local effect, it might be mentioned that a very large dealer in Newark, on the advent of certified milk, voluntarily painted his wagons white, used a towel to wipe the bottles, and changed the spelling of the words sterilized and aerated, which had previously appeared on his wagons sterelized and areated.

A most gratifying result has been the universal confidence of the profession in the gratuitous and disinterested work of the commission and in the character of the product, almost the entire output of the plant being employed by physicians in their work.

The confidence of the public is general, and many persons and local boards of health manifest a pride in the fact that these efforts had their origin in Essex county. The public have demonstrated their confidence on several occasions when the commission has thought it wise to stop the sale of certified milk to investigate a question of safety.

An epidemic of diphtheria in a neighboring town where the milk was sold raised the question of its source, and since two of the sixty men employed in the certified milk plant showed the Loeffler bacillus in their healthy throats, the sale was stopped by the commission. It was shown that in a supply of milk distributed to nearly 2500 families, used for food by 10,000 persons, there were forty-eight cases of diphtheria among this number throughout of the entire county, thirty-seven of whom had been exposed to other sources of infection. The commission's quarantine resulted in a general clamor for the milk, the public confidence being great enough to disregard the question of safety.

The clinical standards adopted by the commission have in the main been realized. Though not entirely fulfilled, they cannot be, because they represent conditions which automatically advance beyond any possible improvement.

The periodical examination of the milk by a bacteriologist has been both instructive and advantageous, and has done more than any other feature of the supervision to improve the milk.

It is found that the reduction of bacterial contaminations which determine the changes in milk is the most difficult problem to solve. More species of bacteria are indigenous to the dairy barn than any other place known, and no medium is so favorable to their growth as fresh warm milk. There are many conditions which make it

difficult to protect milk against their approach, and the vicissitudes through which it passes on the way to the consumer are many, and all favorable to the multiplication of these organisms.

It is my conviction, after an experience of ten years in observing the work on a good plant, that an average content of 10,000 per cubic centimeter cannot be maintained throughout the year by collections in a barn unless the man in charge of the milking is experienced in his work, understands fully and is in sympathy with every detail of the requirements of the contract, and is familiar with the principles and practice of surgical cleanliness. This class of overseer has yet to be trained for his work.

It has been our policy from the first not to publish the numerical findings of bacteria, and this has been on the advice of our bacteriologist, Dr. Rowland G. Freeman, whose experience in milk work would make his judgment final. This policy has also been influenced by the fact that the history of efforts to make germ-free milk is too short to enable us to determine the sources of milk germs so exactly that we could with precision adopt effective measures to prevent them.

The numbers of the bacteria seem to be influenced by season, shedding of the hair of the animals, conditions of fodder, a migrating herd, and the wide variations found with the greatest possible caution and uniformity in dairy methods. Thus we have been led to regard it as unwise to fix a low minimum standard or, indeed, any standard at all.

Where this has been done elsewhere it may have influenced a good dairyman who is trying to produce high-grade milk, but it is quite as certain to discourage this very class, so needful to the fulfilment of our objects, who, if they become discouraged by a requirement of this character, are likely to drop out when they realize that the demand is unreasonable.

The result of frequent chemical analyses of the milk has been helpful to those who use the product for accurate percentage-feeding of the young. It has also been valuable in showing that the uniformity of milk in values may be determined by feeding and a proper grouping of the herd. Professor Leeds found during a period of four years, with fifty-one analyses, a fat content in the supply which did not vary more than one-half of 1 per cent., and this is known to be the most unstable constituent of milk.

The close supervision of the health of the workmen on the plant by a qualified physician has shown it possible not to have had a single case of communicable disease among them during a period of ten years.

The veterinary inspections have been far-reaching in their results; this officer, like the others, being amenable to the commission, is stimulated to vigilant watchfulness over the health of the herd. It has been found that by the inspections of the animals be-

fore being brought to the plant, the quarantine for two weeks after their arrival, the application of the tuberculin test to every new recruit, a rejection of those which react, and the prompt isolation of every animal in ill-health, it is possible to keep a herd of milch cows continuously free from epidemics which would jeopardize the milk.

The keeping qualities of certified milk are remarkable in view of the fact that with our present knowledge large numbers of bacteria in milk are still unavoidable.

Its keeping qualities are improved in proportion as the bacteria are kept out of the milk and its immediate reduction and maintenance at a temperature which retards or prevents their growth. Certified milk can be taken on transatlantic voyages and kept sweet throughout, which is now frequently done. It may be shipped to foreign ports in cold storage for use on return voyages. Members of our commission several years ago carried a supply on the Continent of Europe which remained sweet for many days. It has been taken from New Jersey through four express transfers to the woods of Northeastern Maine and kept sweet for one week after its arrival. It was regularly shipped to Paris during the Exposition, and maintained such a reputation throughout that the dairyman received two gold medal awards. I have received milk in New York having been shipped to Liverpool on a trial trip twenty-one days before, and sending one quart to the bacteriologist and one to the chemist, found that the chemist kept his quart eleven days unimpaired, and on the thirtieth day found my own supply still sweet. On another occasion certified milk was kept in ice forty-five days before it precipitated its casein. Last year 100 quarts were taken on a private yachting cruise through the West Indies, from which was taken the daily supply and which exceeded the needs of the party, who brought back sweet milk at the end of six weeks.

It would be manifestly one-sided to fail to mention some of the advantages which have accrued to the dairyman who has been largely instrumental in these results. The business growth in ten years would seem to be a temptation to anyone who could command the experience and facilities. The Essex county plant had ten years ago 100 cows, and produced 600 quarts of milk; it now houses 600 cows, and has an output of nearly 5000 quarts daily, with lands including about 1000 acres.

The business has won its way to the enviable position of being regarded by many as the best example of dairy farming in the United States.

Mr. Stephen Francisco is deserving of much praise for the effort he has made to carry into effect this plan to raise the standards of milk and for his willingness to co-operate with the physicians in their lead in this direction. He is the first to comply with

so exacting a contract, and his relation to the scheme has been in large measure disinterested. At the end of ten years he is more enthusiastic than ever and is disposed to follow the suggestions of the commission even when they seem to be a pecuniary disadvantage.

DISTINCTIVE FEATURES OF THE PLAN TO CERTIFY MILK.

The meetings of the commission are held bi-monthly at a stated time and place. The quorum is small to insure the transaction of business and the issue of the certificate if the reports of the experts are satisfactory. The reports of the bacteriologist, the chemist, the veterinarian, the dairy physician, and the visiting section of the commission are read and discussed. The dairyman and veterinarian attend the meetings. The chemist's report includes the results of complete bi-monthly quantitative analyses of the milk. The bacteriologist's report includes the numerical findings of bi-monthly examinations of the milk. The dairy physician reports on the condition of health of every employe on the plant.

The following questions are asked of the veterinarian:

What improvements in dairy facilities since last meeting; what improvements in the methods of transportation and delivery; to what extent is the sterilizing plant for infected bottles used; at what temperature are contagious bottles sterilized; total daily product of milk; daily product of certified milk; rations given to animals in certified herd; sources and quality of the water supply for all purposes.

The following questions are asked of the veterinarian:

Number of cows in hospital; their condition and treatment; number in quarantine under inspection; number in recruiting herd; number in certified herd; number tested with tuberculin since last meeting; number rejected because of reaction; the physical condition of the animals; the sanitary condition of the stables and surroundings.

The experience of the dairyman and veterinarian are invaluable in determining the precise requirements of the commission, and their counsel is useful in fixing the justice of the demands made upon the dairy. By his presence at the meetings the dairyman is stimulated to his best efforts, which are thus more likely to be toward a high-quality mark for his milk.

This plan also offers an opportunity for many questions of expediency to be settled at once, new plans formulated to be quickly carried into effect, and allows a complete understanding by both parties concerned.

It has been the policy of the commission to deal only with one individual—the head of the concern if it becomes a stock company, who must control a majority of the stock. It is far better for our purpose to deal with a private concern if it represents

financial ability and dairy facilities, and with one who is engaged in the sale of market milk only, and not its modifications or its manufactured products.

It will be found necessary for milk commissions to exercise patience in realizing many of their plans. Educational influences are always slow, and in this matter the instalment of new methods for obtaining results must often wait upon increased business to warrant the outlay.

The price of the product determined by the commission is not an insignificant factor in the success of the enterprise. Expensive requirements may call for the expenditure of large sums, such as installing an ice plant or electric light and power. Experience demonstrates that while no milk fit for use can be produced with profit to the dairyman for less than five or six cents as first cost, milk of a suitable grade for clinical purposes cannot be sold at a profit for less than twelve or fifteen cents per quart.

Milk has a food value which is higher than is commonly believed. It is claimed that one quart of milk at eight cents is equal in food value to twelve cents' worth of anything else used for food obtainable in the market. It therefore appears that, judged by the market standard for food, milk is usually sold below its real value.

Finally, How shall a crusade against impure milk be conducted in order to obtain the greatest measure of success? Not, we think, by seeking more ineffective legislation; not by police control over production; not by creating unnecessary public alarm, and thereby limiting the general employment of a valuable food; not by startling statements concerning the use of bad milk, such as that more persons have been let die by misplaced confidence in milk than Napoleon killed in all his wars, or that milk takes more lives than whiskey; not by arousing the public, through the press, by agitation adverse to the present methods of dairymen, thus putting the very influence we wish to conserve on the defensive and defeating our purpose.

But rather, we think, by the industrious and patient influence of scientific physicians, who best can apprehend the dangers and who best can point out the preventive measures which will accomplish their removal, who also, by a continual, yet considerate, personal work with the dairyman, appealing to his intelligence, his humanitarian instinct, his financial interests, not forbidding him their professional support, thereby effecting a combination of effort which will be certain of success.

THE USE OF ANTITOXIN IN DIPHTHERIA ASSOCIATED WITH PREGNANCY.

By J. Elmond Kempter, M.D.,
Saint Thomas, Pa.

The employment of antitoxin as a rational procedure in diphtheria no longer needs authoritative stimulus.

In the face of the overwhelming clinical evidence of its efficacy the voice of protest against its use is entirely lost.

The modifying circumstances that confront us at times, however, make us hesitate, for our information is still meager as to what effects antitoxin may have in certain allied conditions associated with diphtheria.

While pregnancy is a natural state, we all know that certain drugs are contraindicated during that period, though we sometimes lay too much stress upon this fact. Still we must recognize the importance of exercising due care in the use of drugs during pregnancy.

The following case of diphtheria associated with pregnancy occurred in my practice recently in which antitoxin was used:

Mrs. X, age twenty-eight, eight months pregnant with first child, the course of pregnancy normal up to that time.

On February 28, 1902, patient developed what was believed to be an ordinary sore throat. On March 2, two days later, an area of dirty-gray membrane showed itself on the lateral walls of the pharynx. Patient complained of pain in the throat; lymphatic glands on the left side slightly enlarged and tender on pressure; no history of exposure; temperature 98.3, pulse 84. Vigorous local measures were resorted to at once, the throat swabbed with hydrogen peroxide and Loeffler's solution at close intervals.

March 3, 9 A. M., patient passed a very restless night; pain in the throat very severe; lymphatics very tender on the left side; some extension of the membrane, but still confined to the lateral walls of the pharynx; temperature 99.3, pulse 100; urine normal in amount, slightly albuminous; patient very nervous; local treatment negative in its effect. On the same day at 4 P. M. 3000 units of the concentrated serum was injected, the temperature at that time being 100, pulse 110; 9 P. M., temperature 100.3, pulse 130; 10 P. M., chill, followed by increased pain in the throat; very restless.

March 4, 1 A. M., patient complained of pain in the joints, with profuse sweating; temperature 97.3, pulse 130; 8 A. M., temperature 99.4, pulse 100; the throat still painful; lymphatics less tender on pressure; the membrane still persistent; 3 P. M., temperature 98, pulse 86; throat painful only on swabbing; membrane confined only to one side.

On the morning of the 6th of March, after passing a good night, temperature 98.2, pulse 84; no membrane; complained of dryness of the throat, which persisted for several days, but otherwise comfortable.

A smear preparation of the membrane demonstrated the presence of the Klebs-Loeffler bacillus.

The patient subsequently came under the care of Dr. George W. Dobbin, who reported a normal labor and a healthy child three weeks later.

While the specific infectious diseases, such as measles, scarlet fever, smallpox, typhoid fever, etc., are frequently reported more especially with reference to their influence upon the fetus, diphtheria seems a comparatively rare complication of pregnancy.

So far as the writer could determine from the literature accessible, this is the first case reported in which antitoxin was used during pregnancy.

Dr. R. H. Steen (*British Medical Journal,* March 10, 1900, p. 575) reports a case of pregnancy complicated with diphtheria in which labor took place during the attack. Twenty-four hours after parturition the mother received 1500 units of diphtheritic serum. On the fifth day the child showed evidence of the disease. Antitoxin was used, with recovery. A bacteriological examination demonstrated the presence of the Klebs-Loeffler bacillus.

Dr. G. A. Auden (*London Lancet,* April 19, 1902, page 1104) reported diphtheria in the new-born in which the mother suffered from a severe sore throat several days before confinement. The child showed symptoms of diphtheria on the eighth day. A bacteriological examination of a swab taken from the throat of the child showed the presence of diphtheria bacilli. Antitoxin was used on the child, with a rapid recovery.

The therapeutic effect of antitoxin in the case under consideration cartainly warrants its use in pregnancy.

While one case does not offer any basis for a definite conclusion as regards the production of immunity in the child *in utero,* the possibility of being able to produce it through the medium of the pregnant mother by the use of antitoxin is worthy of some consideration.

Our knowledge of placental transmission is by no means complete.

The mode of entrance, for example, of morbific agents, such as microbes or their toxins, into the feto-placental circulation leaves much room for investigation.

Recently Lynch (*Johns Hopkins Hospital Reports,* X, 1902, page 283) has given us some interesting conclusions bearing on placental transmission.

There are recorded cases in which vaccination of the pregnant mother has produced immunity in the child.

Simpson, quoted by Playfair, cites several instances in which vaccination of the pregnant mother protected the child, on whom all subsequent attempts at vaccination failed.

Even though sufficient clinical data is wanting, from the fact, however, that antitoxin is known to confer immunity for a limited period to those exposed to the contagion, we can reasonably expect to render the fetus immune through the mother by the use of antitoxin.

TWO MINOR COMMUNICATIONS FROM THE CLINICAL LABORATORY.

By Thomas R. Brown, M.D.,
Baltimore.

THE DIURETIC VALUE OF SALT-SOLUTION ENEMATA, ESPECIALLY AFTER RENAL OPERATIONS.

A few years ago we published a short article on the specific gravity of the urine after salt-solution enemata (*Johns Hopkins Hospital Reports*, August, 1898). These experiments, ten in number, were designed to determine the effect of enemata of normal salt solution upon the specific gravity of urine, although approximately the same results would have been obtained undoubtedly if water had been used in place of salt solution. The method employed was as follows: The patient immediately after voiding urine was given 500 c. cm. of normal salt solution by rectum. The patient was not allowed to drink water or any other fluid during the next four hours, and during this period the urine passed was carefully collected. In some cases urine was voided but once, in other cases twice, but in them all between 250 and 400 c. cm. were voided (that is, between one-half and four-fifths of the quantity given by rectum), while the average specific gravity fell from 1.016 to 1.008.

These results demonstrate the marked diuretic value of salt-solution enemata, and suggests that it furnishes a valuable method of flushing out the kidneys in conditions where such a flushing out is of prime importance.

Among the most important of such conditions may be mentioned after nephrectomy, nephrotomy, and nephropexy; in fact, to a lesser extent all operations in which ether is the anesthetic are associated with a diminution in urinary secretion, and might, therefore, be regarded as cases favorable for the application of this treatment, although to a less extent.

As a result of these observations it has been our custom at Dr. Kelly's private hospital to carry out the following regimen in all cases in which the kidney has been operated upon: One pint or more of normal salt solution is administered by rectum every six, eight or twelve hours, according to the necessity of the case, for a number of days after operation. In the six cases of nephrectomy and the twelve or more of nephropexy in which this procedure has been carried out the secretion of urine has been very free, very often even larger quantities than normal being passed during the days on which this procedure has been carried out. Besides this, it was noteworthy that the convalescence of these patients was much more

comfortable than the usual run of renal patients, the nausea and headache especially being markedly diminished.

In other operative cases it is hardly necessary to give the enemata with such frequency, but one or more was always given even in the mildest cases.

The method is so simple, so absolutely free from unpleasant concomitants, and so easily carried out that it would seem to us highly advisable that it should be incorporated among the essential procedures in the after-treatment of all cases operated upon under general anesthesia.

In the few cases in which nephrectomy was performed and in which there was a marked diminution of urine before operation, often associated also with albumen and casts, coffee or infusion of digitalis was added to the enema on several occasions.

We realize, of course, that salt-solution enemata are used frequently in a sporadic way, but the object of this small contribution is to insist that great value can be obtained by its systematic use at frequent intervals, not only on cases in which the kidney has been operated upon, but also in all cases where ether, an anesthetic peculiarly irritating to the kidneys, has been used, and even in a large number of medical cases where it is essential to promote diuresis rapidly and effectively.

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THE VALUE OF LEUCOCYTE-COUNTING IN DIFFERENTIATING POST-OPERATIVE AUTO-INTOXICATION FROM PERITONITIS.

That the counting of leucocytes is of help in the diagnosis and prognosis in many conditions is, we feel, admitted by the great majority of clinicians, although, of course, most now recognize that the determination of the leucocyte-count in the vast majority of cases does not of itself give the diagnosis, but that in conjunction with other symptoms it may be of great value. There is one condition in which we feel considerable aid may be derived from counting the leucocytes to which but little attention has been paid except by a very few investigators—that is, in differentiating post-operative auto-intoxication from peritonitis. In the great majority of post-operative cases, of course, the convalescent is uninterrupted except by the slight concomitants of operation, which are easily recognized. In the majority of cases which do badly the symptoms are, as a rule, definite enough to demonstrate to us the cause of the trouble, but there is a certain class of patients in whom abdominal operations of various kinds have been performed where symptoms make their appearance which are difficult to diagnose and which are of great worry and discomfort to the surgeon, especially in regard to the question whether the abdomen should be opened or not. Some of these cases are anemic and have slight resisting powers; in others the operation has been extensive, the intestines have been exposed

for a long period of time and handled a great deal, or many intestinal adhesions have been broken up. In all these conditions there may frequently occur an atonic condition of the gastro-intestinal tract leading to considerable and often marked abdominal distension, constipation, nausea and vomiting, and some rise of temperature. In these cases the important question to decide is whether the condition is due to an auto-intoxication from the atonic gastro-intestinal tract or to a beginning peritonitis, and we feel that in this type of case the counting of the leucocytes is of real aid. In the last three years we have used this method eight or ten times, and from these cases, in all of which subsequent results proved the value of the leucocyte-counting, let us give three or four in detail:

Case 1. Mrs. R.—The patient was in an extremely poor physical condition before operation, as she had been suffering from pelvic inflammatory trouble for a number of months, during which time she had lost much weight and strength, and had become very anemic. The operation was a double salpingo-ophorectomy, with the separation of many adhesions between the pelvic organs and the intestines. After the operation, for the first twenty-four hours, the patient did well, but subsequent to that the abdomen became markedly distended, she had violent and persistent nausea and vomiting, the bowels could not be moved by enemata, and she had a slight increase in temperature, reaching 101° to 102° on the third day. The leucocytes were counted twice, first count being 10,500, the second count 12,000, and the condition was therefore considered as more probably an auto-intoxication, although the surgeon in charge felt so sure that it was peritonitis that he was most anxious to operate secondarily. The patient was given large doses of calomel by mouth, followed by Epsom salts, and at the same time an infusion of normal salt solution was administered. By this means the bowels were thoroughly moved, and coincident with the evacuation the symptoms abated, the distension disappeared, the temperature became normal, and the patient made an uninterrupted recovery.

Case 2. Mrs. P.—The patient had a large myomatous uterus, and for several years had been suffering from extreme constipation, getting progressively worse, so that for the six months preceding her admission she would sometimes go from seven to ten days without having a movement of the bowels. She had also suffered with several attacks of typical gallstone colic. A physical examination showed that the stomach was dilated, and in a moderate degree of descensus, while there were evidences of marked atony of the whole intestinal tract. The patient was operated on, the myomatous uterus removed, the gall-bladder opened, a number of gallstones removed, and the gall-bladder drained. The patient did well for three days, after which she began to have attacks of vomiting, the vomitus consisting of large amounts of very fetid black material,

sometimes with a distinct fetal odor. The abdomen was distinctly distended and very tympanitic, and the temperature, while normal at first, began to slowly rise from the sixth day after operation, never, however, reaching over 101°. The question, of course, to decide was whether the clinical picture presented was due to peritonitis or to an acute dilatation of the stomach and intestines, which, as we have said before, had already been in an atonic condition for a considerable length of time. The leucocytes were counted four different times, and they were 7000, 6000, 10,000, and 8000 per c. mm., respectively. The condition was therefore regarded as not due to peritonitis. The patient was given lavage, rectal feeding, infusions of salt solution, and various remedies to control the vomiting and nausea, but they were all of no avail, and she died in the second week after the operation. A post-mortem examination was made, and the peritoneum was found to be perfectly normal; there were no evidences of any peritonitis, but the stomach and intestines were all markedly distended and filled with large quantities of gas and the fetid black material mentioned above. There were no signs of volvulus, intussusception or obstruction.

Case 3. Mrs. M.—The patient, a very anemic woman, was operated upon for appendicitis, and at the operation, besides a chronic thickened adherent appendix, there was also found a carcinoma at the ileo-cecal valve. The appendix, the carcinoma, and a portion of the bowel were removed, and an end-to-end bowel anastomosis made. The patient had a great deal of abdominal pain, nausea, vomiting, and distension after the operation, and it was thought highly probable that peritonitis might be present. The leucocyte-count, however, was 6500 and 7000 per c. mm. on the two occasions on which the counts were made. By the application of hot stoupes, administration of a large dose of calomel, followed by a saline, the symptoms disappeared, and the patient made an uninterrupted recovery.

Case 4. Miss P.—The patient was operated on for an enormous ovarian cyst, somewhat adherent, which was removed. In separating the adhesions the stomach and intestines were handled to a considerable extent. The patient developed uncontrollable nausea and vomiting, abdominal distension and tenderness, and slight rise of temperature. The leucocytes were never over 7000 per c. mm., and an examination of the vomitus showed that it was extremely acid. The condition was entirely relieved by moving the bowels, lavage of the stomach, and subsequently giving large doses of alkali at frequent intervals, magnesium oxide being used.

Case 5. Mrs. W.—This case was very similar to the last one. The patient, after an outlet operation and a suspension of the uterus and of the stomach, developed almost uncontrollable vomiting, with some distension and a slight rise of temperature. The leucocytes were never more than 8000 per c. mm., while the examination of the

vomitus showed that it was intensely acid. Lavage, purgation, and alkalies entirely relieved the condition.

We report these cases because we think they are of interest in showing the value which may be derived from leucocyte-counting in differentiating post-operative conditions. Peritonitis, auto-intoxication and constipation, hyperchloridia, and intestinal obstruction, due to various causes, may present clinical pictures of marked similarity. Peritonitis, except when the infection is so intense that there is no resistance on the part of the patient, is always accompanied by leucocytosis. Intestinal obstruction is only associated with leucocytosis when inflammatory processes or beginning gangrene are to be found in the region of the obstruction. Auto-intoxication, with constipation and intense hyperchloridia, are not associated with a leucocytic increase, and are obviously to be treated entirely on medical, not surgical lines.

The absence of leucocytosis, therefore, may be of real value, it seems to us, in deciding whether or not post-operative surgical interference is advisable, especially in the case of weak, anemic patients, or those with an atonic condition of the gastro-intestinal tract, or those in whom the intestines have been handled a great deal in the course of the operation. The leucocytosis present in cases where infection is present must not, of course, be confused with the post-anesthetic leucocytosis which occurs after operation, especially if ether has been the anesthetic, but which is very transitory, rarely lasting more than twenty-four hours. In connection with this point the observation of King on post-operative non-septic leucocytosis is of interest (*American Journal of Medical Sciences,* September, 1902). He counted the leucocytes and the red-blood corpuscles and determined the hemoglobin at frequent intervals after a number of major operations, all but one being abdominal operations. He also made a differential count of the leucocytes. His conclusions are:

1. An increase of from 5000 to 10,000 leucocytes per cubic millimeter following operation in from six to thirty-six or even forty-eight hours is a normal post-operative condition, provided it be not sustained.

2. Probably the maximum leucocytosis in the majority of cases occurs within the first twelve hours after operation, and is very transient.

3. The leucocytosis in the normal reparative process bears but slight relation to the pulse and temperature.

4. A post-operative leucocytosis of 10,000 or more above the individual normal, sustained for more than a few hours, may be looked upon with suspicion.

5. The apparent increase in number of erythrocytes following operation is not caused by an actual increase of red cells in the circulating blood.

Current Literature.

SURGERY.

Under the Supervision of Hugh H. Young, M.D., Baltimore, Assisted by H. A. Fowler, M.D.

The Surgery of the Simple Diseases of the Stomach. B. G. A. Moynihan, F.R.C.S., Leeds, England. *The Medical News*, June 6, 1903.

In his paper before the American Surgical Association Moynihan discussed the subject of the simple diseases of the stomach under the following heads: (1) Perforation of gastric or duodenal ulcers; (2) Hemorrhage from gastric or duodenal ulcers; (3) Chronic ulcer—its various clinical types; (4) Hour-glass stomach.

Perforations of the stomach may be divided into three varieties—acute, subacute, and chronic. In the acute form the ulcer gives away suddenly; the stomach contents are free to escape into the general cavity. In the subacute form there is always a complaint of greater discomfort for several days preceding the rupture; the escape of fluid from the stomach is small. In chronic perforation a protective peritonitis prevents the escape of fluid into the general cavity. The acute and subacute forms of perforation are more common on the anterior surface of the stomach, while chronic perforation is more common on the posterior surface.

While in the acute and subacute varieties recovery is possible by medical treatment alone, surgical interference is the only safe procedure. Excision of the ulcer is not necessary. The author closes the ulcer at once by two continuous silk sutures. After closing the ulcer the peritoneum is cleansed, the extent depending upon the amount of soiling. Drainage, as a rule, is not necessary. Inspection of the whole viscus should be made, as it has been found that a second ulcer has been present in no less than 20 per cent. The second ulcer is usually on the posterior surface, directly opposite the first one.

Hemorrhage.—The characteristics of hemorrhage from an acute ulcer are: Spontaneity, abruptness of onset, the rapid loss of a large quantity of blood, the marked tendency to spontaneous cessation, the infrequency of a repetition of the hemorrhage in anything but trivial quantity, and the transience of the resulting anemia.

The cases of hemorrhage from chronic ulcer are arranged in four groups, the characteristics of which are:

(1) The hemorrhage is latent or concealed, is always trivial, and often inconspicuous.

(2) The hemorrhage is intermittent, but in moderate quantity, occurring spontaneously and with apparent caprice at infrequent

intervals. The life of the patient is never in jeopardy from loss of blood, though the anemia is a persisting symptom.

(3) The hemorrhage occurs generally, but not always, after a warning exacerbation of chronic symptoms. It is rapidly repeated, is always abundant, its persistence and excess cause grave peril, and will, if unchecked, be the determining cause of the patient's death.

(4) The hemorrhage is instant, overwhelming, and lethal.

As to treatment of hemorrhage in the acute form, whenever surgical treatment is deemed advisable, gastro-enterostomy will prove more effective than any other procedure both in checking the hemorrhage and in preventing its recurrence. In all cases of hemorrhage from chronic ulcer an operation ought to be performed at the earliest possible moment. Gastro-enterostomy should be performed. Local treatment of the ulcer or ulcers is unnecessary.

Chronic Ulcer.—Chronic ulcer of the stomach presents itself clinically in a great diversity of form. It is usually the cause of those intractable cases of dyspepsia. The indications for operation are of widely different character: there may be dilated stomach, hour-glass stomach or gastralgia, and dyspepsia, according to the location of the ulcer. Operation offers immediate and complete relief. Gastro-enterostomy should be performed. No operation in surgery gives better results. The author details his technic of performing gastro-enterostomy, using always sutures in preference to any mechanical aid, such as Murphy's button.

Hour-glass Stomach.—This condition is usually described as "congenital" and "acquired." The author believes there is no evidence whatever which will establish the claim for those who assert that the disease is often congenital in origin. Acquired hour-glass stomach may be caused by (1) perigastric adhesions; (2) ulcer with perforation and anchoring to the anterior abdominal wall; (3) chronic ulcer generally at or near the middle of the organ—malignant disease.

The two aids to diagnosis of greatest value are washing out of the stomach and distension by gas by the administration of a Seidlitz powder in two portions. The use of these two aids is fully discussed by the writer.

As to treatment, a thorough examination of the stomach is important. The dilated pyloric pouch may be so dilated as to resemble the whole stomach, and gastro-enterostomy between it and a loop of jejunum be performed. In many cases no single operation will suffice to relieve the symptoms. The following operations may be practiced: (1) Gastroplasty; (2) gastro-gastrostomy or gastro-anastomosis; (3) either of the foregoing, with gastro-enterostomy from the pyloric pouch, in cases of dual stenosis; (4) gastro-enterostomy from cardiac pouch, when the pyloric pouch is so small that it can be ignored; (5) gastro-enterostomy from both pouches; (6) partial gastrectomy.

The number of cases upon which the paper is based is as follows: Perforating gastric or duodenal ulcer, twelve cases, six recoveries; gastro-enterostomy for chronic ulcer, etc., seventy cases, one death; pyloroplasty, three cases, no death; hour-glass stomach, fifteen cases, three deaths; gastroplication, one case, recovered; excision of ulcer for hematemesis, one case, died.

* * *

TUBERCULOSIS OF THE FEMORAL, INGUINAL, AND ILIAC LYMPH NODES SECONDARY TO FOOT WOUNDS. Charles N. Dowd, M.D., of New York. *Annals of Surgery*, May, 1903.

Dowd reports a series of nine very interesting cases of tuberculosis of the lymph nodes of the femoral, inguinal, and iliac regions in which the entrance of the bacilli was apparently through wounds in the foot. Considering the rarity of infection with the tubercle bacillus gaining entrance through skin wounds, this is really a remarkable series of cases. In all but two of the cases there is good evidence that the infection was received from wounds of the foot, and in these two there is little doubt that the bacilli gained entrance in the same way.

In all but two there was a distinct history of sluggish ulcers. In one instance the ulcer was excised, and found to be tuberculous. In another it was not excised until after it had been curetted, and then no tuberculous tissue was found. In one case the ulcer healed while the patient was in the hospital.

In only two cases was there anything which suggested the source of infection. In one the father had phthisis; in the other the mother, who had a chronic cough, dressed the wound.

As to general course of the disease, there were few variations. The duration of the primary sore varied from less than a month to about eight months. The femoral nodes about Scarpa's triangle were regularly the first ones noticeably enlarged, followed by the inguinal nodes above Poupart's ligament, and, finally, the nodes within the pelvis along the external iliac vessels. In one instance the popliteal nodes were involved, breaking down, forming an abscess.

The process of healing was slow, there being a marked tendency to the formation of sinuses, and complications, such as measles and diphtheria, were not uncommon.

The prognosis is apparently good. In only one case was there evidence of tuberculosis in other parts of the body. The treatment is through removal. In every case but one, where the nodes within the pelvis were not removed at the first operation, a secondary operation for the removal of these was necessary.

The report of this series of nine cases occurring at the St. Mary's Free Hospital for Children within four years leads one to bear in mind the possibility of tuberculous infection in enlarged lymph glands of the femoral and inguinal regions in children.

PATHOLOGY AND BACTERIOLOGY.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

THE CELLS OF INFLAMMATORY EXUDATION—AN EXPERIMENTAL RESEARCH AS TO THEIR FUNCTION AND DESTINY, AND ALSO AS TO THE ORIGIN OF THE MONO-NUCLEATED CELLS. James M. Beattie. *Journal of Pathology,* Vol. VIII, No. 11.

The author's views concerning this complex problem may be expressed concisely as follows:

After an injection of bacteria into the abdominal cavity, various cells appear in the exudation. In the early stages the polymorphonuclear leucocytes migrate from the vessels and appear in great numbers in the peritoneal effusion. These are found abundantly from six to forty-eight hours after injection, and in non-fatal cases they diminish from forty-eight to sixty hours, but in fatal cases the increase persists until the death of the animal. These leucocytes are the main bacterial phagocytes. The bacilli of tuberculosis and leprosy seem to be exceptional, but this is probably explained by their slower growth, and consequently less marked and later polymorphonuclear leucocytosis. During the time they are in excess there appears to be produced a substance injurious to the life, or, at any rate, to the activity of the bacilli, but it is doubtful whether this is produced by these leucocytes or by the mononucleated cells, which are also in a state of great activity. The activity of the bacteria seems to be impaired before they are ingested by the leucocytes. These leucocytes are largely destroyed in the fluid either as free cells or in the interior of other cells. The coarsely-granular eosinophile cells, which are very numerous in the peritoneal fluid in healthy guinea-pigs, play no important part, at any rate, in relation to the bacteria used during the investigations. The mononucleated phagocytes are found at all stages. They are most abundant from thirty-six hours onward. They are derived partly from the endothelium of serious membranes of blood-vessels, of lymph-vessels, of lymph sinuses, etc., partly from the large mononucleated leucocytes, and partly from the lymphoid tissue surrounding the vessels. They are ameboid, and show, especially during their stages of greatest activity, a marked multiple vacuolation of their protoplasm, which is probably evidence of secretory action on the part of these cells, and not merely of a degenerative change.

These cells are especially phagocytic to other cells. They may also ingest bacteria, and certain forms apparently more readily than others. The bacilli of tuberculosis and of leprosy are found in great numbers in these cells, and they appear to actually multiply in the cells. The ingested leucocytes undergo a gradual process of digestion by these mononucleated cells. These cells are largely destroyed in the peritoneal sac. None of the internal organs appear

to act as storehouses for, or destroyers of, these cells, with the exception probably of the lymph glands. Great numbers of these cells are always found on the omentum. These mononucleated phagocytes are the most important cells of inflammatory exudations. In cases of peritonitis the endothelium of the omentum furnishes a great number of these cells. The omentum must, therefore, be regarded as an important agent in protecting the individual from infection by way of the peritoneum. The presence of large numbers of these mononucleated cells, if they are actively functioning, in inflammatory exudations must be regarded as a favorable sign. The plasma cells, which Mallory suggests may, in typhoid fever, produce the antitoxins, are, Beattie believes, the mononucleated cells which are derived from the large mononucleated leucocytes. They can and do act as phagocytes, but in the later stages of infection this phagocytic action is not seen, simply because there is no need for them to function in this way. They are not confined to any special form of inflammation, but are most numerous in cases of bacterial or of toxic infection.

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THE ETIOLOGY OF SLEEPING SICKNESS. A. Castellani. *The Lancet*, March 14, 1903.

The organism which Castellani describes as the cause of sleeping sickness he has grown in pure culture in eight out of ten post-mortem examinations from the cerebro-spinal fluid and from the heart's blood. During life he has found the organism but once in the blood, but has grown it in two out of three cases from the cerebro-spinal fluid obtained by lumbar puncture.

He describes the germ as a distinct variety of the streptococcus group, its morphology varying, according to the media and the age of the culture, from long chains to typhoid diplococci. Frequently well-defined mucoid capsules are made out, and in hanging drops well-defined Brownian movements are seen. The organism stains with the ordinary aniline dyes. The organism grows well on agar, being much more vigorous than the streptococcus pyogenes or the streptococcus lanceolatus. The colonies show a marked tendency to coalesce: still in some cases the growth may be much more delicate than usual, and the colonies may remain separate. In stab culture the growth takes place luxuriantly along the stab, the surface growth being more delicate. There is no gas formation in sugar agar. Litmus remains unchanged. There is a slight growth on potato. Gelatine occasionally shows a slight liquefaction after five or six days and a well-marked growth.

The appearance of bouillon cultures varies greatly. In most cases the bouillon remains clear, and there is a flocculent sediment. Sometimes the bouillon is cloudy, with little or no sediment. These sediments show chain and diplococci forms.

The organism grows well on serum. There is no coagulation of milk, in this respect differing from the streptococcus pyogenes.

The organism is a facultative anerobe. The agglutination experiments have not been carried to any extent, but they would seem to be positive.

Castellani claims that this organism differs entirely from the diplococcus isolated and described by the Portuguese commission.

In the *Lancet* of May 23, 1903, the Portuguese commission replies to Castellani. They claim to have described a diplostreptococcus derived from the cerebro-spinal fluid and arachnoid exudate in several cases of sleeping sickness in 1900, and in a second report in 1902 the cultural characteristics of the organism were fully described, and are identical with those described by Castellani. This, however, is a mere contention of priority. It would seem that the organism described is the true cause of sleeping sickness.

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THE EFFECT OF THE INTRODUCTION OF FOREIGN BODIES INTO THE GALL-BLADDER UPON THE DEPOSIT OF CALCULUS-FORMING SUBSTANCES. E. S. Carmichael. *Journal Pathology,* May, 1903.

The investigations carried on in order to elucidate the processes which lead up to and bring about the deposition of substances forming biliary calculi in the gall-bladder have done much to clear up the pathology of cholelithiasis.

The author carried on experimental investigations on the introduction of foreign bodies which may act as mechanical irritants into the gall-bladder, and also, by introducing micro-organisms, to ascertain to what extent chemical deposition may depend upon a mechanical or a micro-organismal irritant alone, or upon both together.

A preliminary experiment was performed on a dog, in which a small pebble was introduced into the gall-bladder. After seven weeks a culture of typhoid fever was introduced; after two and one-half months the dog was killed. The pebble was found to be covered by a fine crystalline deposit, which on chemical examination proved to be calcium carbonate. All tests for cholesterin crystals gave a negative result. This experiment led to the following conclusions:

1. That a foreign body introduced into a previously sterile gall-bladder may remain in that viscus for a considerable time without bringing about an invasion of micro-organisms.

2. That incrustations can occur on a foreign body that has been introduced into the gall-bladder with, in addition, a subsequent introduction of the typhoid bacillus.

3. That, experimentally, micro-organisms introduced into a previously healthy gall bladder can, some weeks afterwards, be ob-

tained in pure culture from the bile—a fact which is borne out by chemical experience and by the work of previous investigators.

The fact that foreign bodies alone, without the subsequent introduction of micro-organisms, were able to bring about the deposition of calculus-forming substances was demonstrated by three experiments on rabbits. In all cases the deposit was shown to be carbonates.

A second series of experiments consisted in introducing into the gall-bladder foreign bodies in addition with micro-organisms. The results of this series lead to the conclusions that micro-organisms play an entirely passive part in bringing about the deposition of carbonates in the gall-bladder, and that they may remain a considerable time in the gall-bladder and retain their distinctive character.

The author gathers from his experiments that foreign bodies do not cause a deposition of calculus-forming substances, cholesterin being absent in all cases, and further that concretions can be formed in the gall-bladder without the presence of the bacillus coli communis or bacillus typhosus, and that the changes leading to such concretion-formation may occur equally whether these organisms be present or not.

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EXPERIMENTAL FAT NECROSIS. Gideon Wells. *The Journal of Medical Research*, February, 1903.

After reviewing the literature and giving the results of animal experimentation, the writer summarizes as follows:

1. Fat necrosis seems to be merely a special form of necrosis of fat tissue, differing from simple necrosis chiefly in the sharp limitation of the affected area, usually by a wall of leucocytes and later by connective tissue, and the filling of the necrosed cells by the products of fat-splitting. Each of these features can be produced experimentally in various ways, but the complete picture has never yet been produced except by products of the pancreas.

2. Fat necrosis can be produced with constancy in cats and dogs, less successfully in rabbits, by intraperitoneal injections of extracts of fresh hog pancreas, and nearly as well with dog pancreas. The results are the same with solutions that are weak in alkalies, weak acids, or in water. Fat necrosis produced in this way is the same in appearance, both macroscopically and microscopically, as human fat necrosis

3. Equally constant results can be obtained with ordinary commercial "pancreatins."

4. Preparations of carica papaya, although highly irritating, do not produce fat necrosis.

5. This property of pancreatin to produce fat necrosis survives heating for five minutes at a temperature as high as 65° to 70° C. Above this point the property is entirely lost. The amount of

fat necrosis produced decreases steadily after exposure at 55° and upwards. These observations point to enzyme action as the source of the condition.

6. It has been impossible to ascertain which of the pancreatic enzymes causes fat necrosis. Trypsin, weak in or devoid of lipase, will not produce this effect. Lipolitic extracts of hog's liver or cat's serum are likewise inactive. Mixtures of lipolitic extract of liver with pancreatic trypsin will not produce fat necrosis. Extracts of fresh dog pancreas that are, when injected, feeble in or devoid of tryptic power, but possess lipolitic power, cause fat necrosis. If to such extracts an emulsion of duodenal mucosa is added, the enterokinase greatly increasing the tryptic activity, no fat necrosis will be produced. As the lipase of pancreatic extract cannot be isolated, it is impossible to ascertain if it by itself is capable of causing fat necrosis, but it seems highly that it is essential. It may be that the lipase causes fat-splitting after some other ingredient of the pancreatic juice has injured the cell.

7. When fat tissue within the body has been made necrotic and preserved from outside influences of absorption, the lipase that it may contain does not produce the changes of fat necrosis.

8. Simple alkaline solutions of the strength of pancreatic juice or slightly stronger do not produce fat necrosis.

9. Many of the features of fat necrosis may be produced after death in animals, and also *in vitro,* with pancreatin, but the resulting condition does not resemble fat necrosis at all closely.

10. Dissemination outside the abdominal cavity has been observed as early as twelve hours after intraperitoneal injection. The route by which the spreading is accomplished is probably the lymphatic system.

11. The forms of the foci produced seem to depend simply upon the area exposed to the action of the pancreatin.

12. The earliest changes in fat necrosis is a simple necrosis of the surface tissue, which extends gradually into the deeper fat cells. Fat-splitting is subsequent to the necrosis, and not its cause. At first the products are non-crystalline, but become so later.

13. The process progresses for but a few hours at any one point, the extension seeming to be limited by surrounding leucocytes. Absorption of the area is accomplished by leucocytes, and healing is by proliferation of connective tissue from the margins. Adhesions are seldom formed.

14. The foci become visible to the naked eye in three to five hours. They may disappear within eleven days or persist for a much longer time, depending chiefly upon their size.

15. Fat necrosis by itself is not dangerous to the affected animal, and may develop while the animal shows no symptoms.

Society Reports.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD MARCH 2, 1903.

Analysis of Fifty Cases of Summer Diarrhea in Children—Dr. J. H. M. Knox.—The mortality among young children is largely due to diarrheal diseases, a large part of which occur during the summer. The Thomas Wilson Sanitarium was built for the treatment of such cases, and every summer 300 to 400 cases of intestinal disorders receive treatment there. Dr. Booker's important work on the bacteriology of the diarrheas of children was done there. The recent revival of interest in the subject has been due to Dr. Flexner's stimulus and co-operation.

Clinically, there are many classifications of summer diarrheas, all of them being more or less unsatisfactory. Two divisions, however, are useful to recognize—(1) gastro-intestinal catarrh, in which toxic symptoms predominate; (2) ileo-colitis or colitis, in which there is follicular ulceration.

In the first group there is malaise, food is refused, nausea and vomiting come on, there is fever of varying degrees; then the diarrhea begins, the stools being semi-fluid or fluid, containing more or less mucus, and sometimes tinged with blood. Microscopically, they contain epithelium, pus, and a few red-blood corpuscles. The fulminating types is called cholera infantum. In this the toxic symptoms are intense, there is great constitutional breakdown, with high fever, clammy extremities and serous stools, the patient passing into stupor, then becoming comatose, and dying before many hours have passed. There are cases in this group which become subacute or chronic, lasting for a considerable time. These are the so-called cases of intestinal indigestion, which have occasional exacerbations and gradual loss of weight.

Pathologically, the cases are characterized by absence of lesions, the intestines are pale and contain catarrhal exudate, which is seen microscopically to consist of red and white blood corpuscles and epithelial cells. Occasionally there is an adherent membrane, with spots of ecchymosis in the ileum or colon. Peyer's patches and the mesenteric glands are swollen.

In the second group the symptoms may be similar. The onset is often acute, the symptoms being those of an acute catarrhal inflammation as before, but there is soon destruction of tissue. Localizing symptoms are prominent, there is much colic and tenesmus, and wasting is marked. The stools soon suggest ulceration, blood being present in large amount, often mingled with pus. The cases may, however, become chronic, and are then very tedious. Complications may arise, such as hydrocephalus, or a peculiar subcutaneous hardness, due to loss of fluid from the tissues. About one-third of the cases belong in the first group, the remainder in the second. One or two typical cases may be cited to show the progress of the disease.

Group I. A child of eight months was brought in on July 10, the mother stating that the child had summer complaint. It had been fed on condensed milk. Its illness began six days previously with diarrhea, there being five or

six movements a day. On one day there had been fifteen movements, the stools being green and slimy, but not containing blood. The patient became quite weak and had had fainting spells. On admission the temperature was 105.5°, pulse 80, face sunken, abdomen scaphoid, chest negative. The child responded well to stimulation. On the third day toxemia again developed, and there was edema over the whole neck and chest. The urine contained a high percentage of albumen, and the child died of acute nephritis seven days after admission. At autopsy there was no tympanites, the stomach was anemic, the intestines, both large and small, were pale and showed swollen follicles. The mesenteric glands were soft and swollen. There was acute parenchymatous nephritis and slight acute broncho-pneumonia. The case was on the border-line of cholera infantum.

The second child, eighteen months old, was admitted on July 31, the mother stating that the child was suffering with its teeth and diarrhea. The child had had diphtheria when one year old. It had been nursed at the breast, but began to eat vegetables, etc., when six months old. Three weeks previously the stools became increased in number from six to ten daily, and were green and slimy. On admission the child was in fairly good condition. Its stools were green, and contained pus and mucus, but no blood. Regular diet cured the child in fourteen days.

Group II. A child was brought in on July 19 with the history that five days previously it had been seized with nausea, vomiting, and diarrhea. The stools were six to ten in number daily, and were fluid and fecal in character until three days before admission, when they became bloody. The child was fretful, its abdomen was tender, and the stools contained bright-red blood. There was much nausea and vomiting. The temperature ranged between 99° and 103°. Six days after admission the blood disappeared from the stools, and the child was taken away eight days later.

Another child was admitted on June 30. It had been nursed at the breast until six months old, and after that on condensed milk. It had been seized a few days previously with nausea, vomiting and diarrhea, with slimy stools. There had been some fever. On examination there was a rickety rosary, the abdomen retracted, the stools were thick and mucous, and contained blood and pus. There was never much fever. The child died three weeks after admission, and at the autopsy, which was performed by Dr. Flexner, the stomach was found anemic, and the intestines contained bloody mucus, many hemorrhages, and, in addition to the chronic enteritis, many small ulcers surmounting swollen follicles. The mesenteric glands were soft and swollen. The case was evidently one of follicular enteritis.

No case has occurred in two summers with a membranous enteritis. The cases may be briefly summarized as follows:

Age:	Under 6 months	14
	Between 6 and 12 months	22
	Between 12 and 18 months	9
	Between 18 and 24 months	5
	Above 1 year	1

Blood in the stools:	No blood in	13 cases.
	Occasionally showed flecks of blood in	18 "
	Moderate amount of blood in	10 "
	Considerable amount of blood in	5 "
	Profuse hemorrhage in	1 case.

It was the general experience both of private practitioners and the physicians at the Sanitarium that there was more blood in the stools in the cases seen during the summer of 1902 than usual.

Diet before admission:	Nursed wholly at the breast	7
	Mother's milk plus condensed milk	2
	Mother's milk plus cow's milk boiled or pasteurized	11
	Raw cow's milk, whole or diluted	16
	Malted and condensed milk	13
	Raw milk and condensed milk	1

A striking fact was that in thirty of the cases unboiled water had been used either for diluting the milk or for cleaning the feeding bottle, and as it is known that there are frequently millions of bacteria per cubic centimeter in unboiled water in the summer, it is easy to imagine that the original infection may have often come from the water. Soiled linen was doubtless one channel of infection. One case developed diarrhea while at the Sanitarium, although receiving pasteurized milk and boiled water between feedings. The infection was probably carried by flies.

Treatment.—In cases seen reasonably early the bowels are emptied by a purge, milk is withheld as long as possible, stimulation is used as needed.

In conclusion, it may be said that (1) diarrhea in children due to the B. dysenteriae cannot be differentiated from ordinary summer diarrhea. (2) The discovery of the cause is the first step towards providing a remedy. One method of prevention will certainly be the provision of a plentiful supply of pure milk for those who cannot get it themselves. (3) The agglutinative reaction must be the means of diagnosis for the clinician. It will be especially useful in cases with a slight onset. (4) Disinfection must be thoroughly practiced. (5) Early diagnosis by laboratory methods makes the treatment more easy.

The Bacillus of Dysentery, with Special Reference to Its Etiological Relationship to the Summer Diarrhea of Children—Professor Flexner.—The starting-point of my interest in dysentery was furnished by the extraordinary facilities which I had for the study of that disease while serving on the Philippine Commission, sent out by the Johns Hopkins Hospital University in 1899.

The history of the B. dysentriae is important. In 1898 Shiga reported his studies of Japanese dysentery in the *Centralblatt für Bakterologie.* He had already published preliminary reports in Japan previously. In order to be sure that the organism which he described was etiologically concerned, Shiga used an agglutinative test. All previous descriptions had failed to mention control tests. The bacillus described by Ogata, for example, was merely peculiar in its characteristic. Still another bacillus was found to be merely

pathogenic to animals. These qualities, however, could not serve as criteria, and Shiga's use of an agglutinative reaction was the first definite work in that direction. He fails to receive due credit from German writers. Not all dysenteries are due to the Shiga bacillus. The amebic type, for example, is apparently an independent infection, although in some cases of amebic dysentery there may be a previous or a subsequent bacillary infection. Epidemics of dysentery are, however, doubtless all due to the Shiga bacillus. Local outbreaks and many of the sporadic cases are likewise due to the same organism. In spite of Kruse's suggestion that institutional outbreaks of dysentery are more likely to be due to pseudo-dysenteric organism than to the Shiga bacillus, Vedder and Duval found only the Shiga bacillus concerned in outbreaks of institutional dysentery in New Haven, Conn., and Lancaster, Pa. In the United States, therefore, it is reasonable to infer that the institutional cases, as well as many of the sporadic cases, are due to this organism.

The organism is like the B. typhosus, and may be easily confounded with it. Chemically, their action is very similar, but B. dysenteriae is not motile, and its agglutinative reaction serves to differentiate it. The question of its motility is an interesting one. Shiga's first report and my own early observations agreed that the organism was motile. In 1901 Kruse reported a small epidemic, ignoring the work done by Shiga and the Johns Hopkins Commission, and said that B. dysenteriae was non-motile. Vedder and Duval failed to find motility, but succeeded in staining flagella by Van Ermengem's method. Later, at the Thomas Wilson Sanitarium, Bassett and Duval proved that the organism was motile, but only under certain conditions. If it be passed through guinea-pigs, transplanted to bouillon, then to second bouillon, the transfers being rapidly made, a rapid motility can be made out which quickly disappears. Similar difficulty was experienced in determining the motility of B. coli during the earlier studies. Perhaps in nature the Shiga bacillus is motile, but in cultures this is quickly lost. The presence of flagella proves probable motility. In some epidemics B. dysenteriae has not been isolated, but this failure can be readily explained. The method of isolation is described fully in the *Journal of Experimental Medicine,* 1901. The most important recent contribution on the subject is the study made at the Thomas Wilson Sanitarium in the summer of 1902, the Shiga bacillus being found there in the stools of forty-three cases. The number of bacilli present varied with the nature of the stools, most organisms being found in the bloody portions and the next largest number in the mucous portions, comparatively few being present in the solid portions. The etiological relationship of the organism is proved by the agglutinative reaction, which may, however, be delayed or fail altogether to appear. It is most useful in cases where it appears early. If it appears late, it may not be possible to use the antidysenteric serum with success. It is safe, however, to assume that as many as forty-three out of fifty cases of summer diarrhea are due to the Shiga bacillus. There is probably some slight difference in organisms isolated in various cases. The agglutinative reactions are somewhat irregular, as also are the chemical reactions in sugar media. For instance, all form acid, but no gas, in glucose media, while only some of the cultures form acid in mannite. This suggests that we are probably dealing with a group of organisms rather than with a single species.

The results with protective serum will be followed with interest. In 300 cases recently studied Shiga tried this and found it of definite use. Kruse published a paper more recently and ignored Shiga's work. Horses are being at present immunized in Philadelphia against the B. dysenteriae, the cultures which are used being of such virulence that 1 mg. will kill a guinea-pig weighing 300 grammes. The serum thus prepared will definitely protect guinea-pigs, and it will be tried on a large scale in human cases next summer. By immunizing animals with various strains of the organism it can be determined whether there is any cross-protection. There doubtless is such protection, but a large amount of serum is required.

To summarize: (1) The acute dysentery of adults and the summer diarrhea of children are due to the same cause, *i. e.*, the B. dysenteriae of Shiga, the organisms having definite group characteristics; (2) Immunization against the organism is possible and the outlook for a protective serum is good.

Professor Welch: It is not yet known whether the organisms described by Kruse and other investigators are species different from the true Shiga bacillus. Lentz thinks mannite will help to differentiate the subgroup. Hiss and Russell have described an organism which will form acid in glucose, mannite, and maltose. It would be unfortunate to follow the suggestion of Lentz and Martini, for we do well to regard the etiological organisms as being of one group. It is interesting to find an organism which can produce so many forms of lesion—catarrhal, follicular, or an ulcerative dysentery. It is impossible to say at present whether the amebae and the bacillary forms account for all the cases of dysentery. The organism has not yet been reported in English cases of dysentery, although Dr. Ayer investigated an epidemic of dysentery near London recently, but failed to find the Shiga bacillus. The findings of Duval and Bassett have been confirmed by Spronck in Holland.

Splenomyelogenous Leukemia—Dr. Charles Simon (presented by Dr. Thayer).—The patient was a printer, forty-two years old, who was first seen on October 24, 1900, complaining of dysentery and loss of weight. In January, 1901, he was feeling better, but the blood-count showed reds 1,350,000. Of the leucocytes 6 per cent. were neutrophilic myelocytes. There were no eosinophiles, a few normoblasts, and a very few megaloblasts were present. A week later the myelocytes increased to 9 per cent., and later to 12 per cent. Dr. Thayer saw the patient on June 3, 1901, when he had 2,000,000 red corpuscles and a leucocytosis, largely of polymorphonuclears. On November 15, 1901, his reds had risen to 4,000,000, leucocytes 14,000, hemoglobin 14 per cent. Still later the reds fell again to 1,360,000, and at this time the hemoglobin was 35 per cent. Myelocytes formed 29 to 30 per cent. of the leucocytes; no eosinophiles. In June, 1902, headache and fever came on, and the gums and submaxillary glands became sore. The face was puffed, and there was a definite gangrenous stomatitis. The spleen was 9 cm. below the costal margin. The axillary, cervical, and inguinal glands were soft and swollen. The leucocyte-count was 116,000, of which 18 per cent. were polymorphonuclears, 30 per cent. large mononuclears, 47 per cent. myelocytes; no eosinophiles. The patient died after a week. The interesting features of the case are (1) absence of splenic enlargement early in the disease; (2) absence of eosinophilia.

Book Reviews.

THE PRACTICE OF SURGERY. A Treatise on Surgery for the Use of Practitioners and Students. By Henry R. Wharton, M.D., and B. Farquhar Curtis, M.D. Profusely illustrated. Third edition. Philadelphia and London: J. B. Lippincott Company. 1902.

In this volume of over 1200 pages the attempt is made to cover the whole field of surgery. This has made it necessary to condense the subject-matter. The tendency in works of this kind is to give undue prominence to unimportant subjects, while treating with insufficient detail those of greater importance. In the present volume an attempt has been made to so divide the space as to overcome this objection. It seems to us the authors have succeeded in no small measure in their efforts in this direction.

If one opens the volume to any subject expecting to find a full and complete discussion of any one point, disappointment will result, but one will find a short and concise statement of the facts which are up-to-date. For a further discussion one will have to go to larger treatises.

While a work of this kind is disappointing from the point of view of a specialist, the general practitioner will find it helpful in bringing together in concise form the main facts in the field of general surgery. An index adds much to the value of the book.

THE AMERICAN TEXT-BOOK OF OBSTETRICS. In two volumes. Edited by Richard C. Norris, M.D.; art editor, Robert L. Dickinson, M.D. Second edition, thoroughly revised and enlarged. Two handsome imperial octavo volumes of about 600 pages each, nearly 600 text illustrations, and 49 colored and half-tone plates. Per volume: cloth, $3.50 net; sheep or half morocco, $4 net.

The "American Text-Book of Obstetrics," being composed by different authors, each selected for his fitness in dealing with the various phases of the subject, will be found a useful book for both practitioners and students. Students may experience some difficulty from the fact that the arrangement is not as simple as it might be. Since the book has been in general use among students I have heard considerable complaint from them—that they had to read so much to obtain so little. The chapter on the mechanism of labor is especially complicated and difficult for a student to understand.

Several statements can hardly be considered up-to-date, *e. g.*, the giving of antiseptic douches, in the various forms of injection, is advised, and according to the most scientific observers this plan of treatment is not indicated.

Eclampsia is not treated of at all fully or scientifically; but, on the whole, it must be said that up to the present time it is one of the best books on the subject that we have.

L. M. A.

Disease of the Pancreas: Its Causes and Nature. By Eugene Opie. Philadelphia: J. B. Lippincott Company.

Few can speak with more authority upon disease of the pancreas than Opie. He has published much of importance on this subject in various medical journals. The present work represents a *résumé* of the literature, with much original thought. The anatomy of the pancreas, with the histology and anomalies, occupy about sixty-five pages. Conditions peculiar to the organ have received most attention, especially those bearing a special relation to the physiology of the organ. The varieties and etiology of acute pancreatitis are discussed in a very clear manner, and the clinical histories, with autopsy findings, are given in some detail. The relation of fat necrosis and diabetes mellitus to lesions of the pancreas has been much discussed in recent years. Opie has done considerable experimentation in this line, and his conclusions will prove of much value to the reader. The chapter on the symptoms and treatment of pancreatic disease will be especially appreciated by the clinician and surgeon, as the recognition of pancreatic disease has always been rather obscure. A list of twenty-one illustrations add to the value of the book. We feel assured that the work will meet with the success which it deserves.

H.

A Treatment on Diseases of the Anus, Rectum, and Pelvic Colon. By James P. Tuttle, A.M., M.D. With 8 colored plates and 338 illustrations in text. New York: D. Appleton & Co. 1902.

This volume of over 900 pages on this special branch of surgery gives a very comprehensive discussion of the diseases of this region.

The opening chapter discusses Emoryology, Anatomy, and Histology. This is followed by Malformation of Anus and Rectum, while Chapter III is devoted to Examinations and Diagnosis; then follows Catarrhal Diseases of Rectum and Sigmoid, Tuberculosis, Venereal Diseases, Ulcerations, Fissue, Perirectal Abscess, Fistula, Stricture, Constipation, Obstipation and Fecal Impaction, Pruritis Ani, Hemorrhoids, Prolapse.

Chapter XVIII considers the Benign Tumors of the Rectum, followed by Malignant Neoplasm in Chapter XIX. A separate chapter is given to Extirpation of the Rectum. The final chapter on Recto-Colonic Alimentation contains, in addition to a discussion of the various methods of rectal feeding, methods of absorption, etc., a long list of formulae useful for rectal feeding. A good index adds greatly to the volume.

Y.

The Diseases of the Heart and Arterial System. By Robert H. Babcock, A.M., M.D. New York and London: D. Appleton & Co.; Baltimore: Medical & Standard Book Co. 1903.

Babcock's book is a most satisfactory treatise on the diseases of the heart considered largely from the more practical point of view of the practitioner. The theories underlying the various conditions discussed are treated in a comparatively few words, while the anatomy and physiology of the circulatory organs are also discussed, but briefly. The book is well written and well illustrated, and while containing nothing especially new, it is a work which should be of real help to the medical student and the busy practitioner.

B.

American Edition of Nothnagel's Practice: Diseases of the Stomach. By Dr. F. Riegel of Giessen. Edited, with additions, by Charles G. Stockton, M.D., Professor of Medicine in the University of Buffalo. Handsome octavo volume of 835 pages, illustrated, including six full-page plates. Cloth, $5 net; half morocco, $6 net. Philadelphia, New York and London: W. B. Saunders & Co. 1903.

This is one of the most interesting and instructive volumes which has appeared in the American edition of Nothnagel's Practice. The whole subject of diseases of the stomach is treated most thoroughly and yet conservatively by the eminent German clinician, and everything of value is incorporated in the volume. In a book of such value it is difficult to pick out points for special commendation, but we wish to especially recommend the discussion of diagnosis in diseases of the stomach, which is taken up at great length and is thoroughly satisfactory, and the general subject of the treatment of gastric diseases. The additions by Dr. Stockton have distinctly increased the value of the work, and we feel that it is one of the most thorough, complete and satisfactory volumes of the series which has yet appeared. B.

A Clinical Treatise on Fractures. By William Barton Hopkins, Surgeon to the Pennsylvania Hospital and to the Orthopedic Hospital and Infirmary for Nervous Diseases. Philadelphia: J. B. Lippincott Company. 1900.

The subject-matter of this volume of 260 pages is really a report of unpublished lectures delivered by the author at the Pennsylvania Hospital. The method of dealing with the subject is therefore descriptive, considering first the general nature of the fracture, the diagnosis, and treatment. The illustrations for the most part are made up of skiagraphs of the various forms of fractures. These are good.

While the work gives a general survey of the whole subject and brings out the salient points, we do not believe it will prove a popular treatise. The method of dealing with the subject is not calculated to make the work of great value as a practical working guide, nor is it, on the other hand, exhaustive.

The Roller Bandage. By William Barton Hopkins, M.D., Surgeon to the Pennsylvania Hospital and to the Orthopedic Hospital and Infirmary for Nervous Diseases. With illustrations. Fifth edition, revised. Philadelphia: J. B. Lippincott Company. 1902.

This popular handbook on the use of the roller bandage is, as its author declares, "more than a mere monograph on the roller bandage, for the book is intended to teach the principles of bandaging as well." The application of a bandage can be learned best under the direction of an instructor. Illustrations can to a great extent take the place of an instructor. The volume is profusely illustrated, the various steps in the application of special bandages being photographed from life and these reproduced.

The text is clear and concise, and gives whatever explanation is necessary to a perfect understanding of the illustrations. This little book deserves its popularity.

A Manual of Practical Hygiene for Students, Physicians, and Medical Officers. By Charles Harrington, M.D., Assistant Professor of Hygiene in the Medical School of Harvard University. Second edition, revised and enlarged. Illustrated with 12 plates in colors and monochrome and 113 engravings. Philadelphia and New York: Lea Bros. & Co. 1902.

The demand for a second edition within two years shows that Harrington has hit the mark. The new edition is a handier volume than its predecessor, though considerably enlarged in its contents. The new edition brings the subject up to date as nearly as is possible in a systematic work.

The twelfth chapter is entirely new. Its title is the Relations of Insects to Human Disease, and it gives in twenty-odd pages about all that is definitely known about the distribution of infection by flies, fleas, bedbugs, and mosquitoes. This chapter is well illustrated.

A good deal of matter has been cut out of the earlier chapter on quarantine, and the book is better for the omission.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Volume II, June, 1903. Surgery of the Abdomen, including Hernia.—Gynecology.—Diseases of the Ductless Glands; the Hemorrhagic Diseases; Metabolic Diseases.—Ophthalmology. Philadelphia and New York: Lea Bros. & Co. 1903.

Good as usual, the second volume of this quarterly contains four extended articles, each by a recognized authority. The first is by William B. Coley on Surgery of the Abdomen, including Hernia. John G. Clark contributes an article on Gynecology; Alfred Stengel one on the Diseases of the Blood and Ductless Glands, the Hemorrhagic Diseases, and Metabolic Diseases, and Edward Jackson an article on Ophthalmology.

There are fewer illustrations than usual, though Coley's article has many good engravings, and there is a good color plate in Stengel's contribution.

The Treatment of Fractures. By Charles Locke Scudder, M.D. Third edition, thoroughly revised. Philadelphia, New York and London: W. B. Saunders & Co. 1902.

The appearance of the third edition of this work within two years after the first edition made its appearance is a striking comment upon the popularity of this treatise on fractures. The work owes its great popularity to the fact that it discards theoretical considerations, and is concerned with the practical treatment of fractures as they present themselves. These are arranged in logical sequence. The illustrations, which are abundant and excellent, serve to make clearer the author's methods of treatment. These methods are always simple and direct.

In the new edition use has been made of the recent contributions on gunshot fractures to add new facts and illustrations to this chapter.

We are glad to see a good index added. The value of the work is greatly increased thereby. Altogether this is one of the best short works on fractures which we have. Y.

MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

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BALTIMORE, AUGUST, 1903

THE REGISTRATION OF TUBERCULOSIS IN PHILADELPHIA AND BALTIMORE.

THE following letter from Dr. C. Hampson Jones, assistant commissioner of health of Baltimore city, is of interest not only because it corrects an erroneous impression to which the JOURNAL perhaps gave countenance, but also because it indicates the official view concerning the registration of tuberculosis. Dr. Jones says:

"In the July number of your JOURNAL, among the 'Medical Items,' I found this paragraph: "Dr. Edward Martin, director of the Department of Health and Charities of Philadelphia, has determined to place tuberculosis upon the list of notifiable diseases. Baltimore next?" I infer from the above that you are under the impression that our city has no specific ordinance directing the reporting of cases of tuberculosis. Permit me to call your attention to Ordinance No. 75, passed in the session of the council 1895-1896, and signed by Alcaeus Hooper, mayor.

"In order to comply with this ordinance the Health Department distributed printed circulars of instruction as to the methods to be used in the care of the sick and the prevention of the spread of the disease. The result was complete concealment of all cases of tuberculosis.

"We have the ordinance, and we are waiting for a favorable condition of the minds of the physicians and laity to enable us to do more than we can at present to control or stamp out the disease."

With respect to the JOURNAL item, let us first say that an announcement that an American city is about to do something quite important, as, for instance, to register tuberculosis, should not be taken too seriously. The medical press has repeatedly chronicled Philadelphia's virtuous resolution, and sooner or later the resolve will be put into execution. The JOURNAL may print the same interesting item again and again before the registration of tuberculosis is actually undertaken in Philadelphia. Such news is always interesting.

When a small boy has resolved to put his head under water, the spectator cannot afford to lose one moment of the boy's performance until the thing is finally done. The preliminary exercises by which the boy wears out his fear of the water are indeed more entertaining than the actual plunge. It would be great sport to see Baltimore and Philadelphia matched in such a game. With a little good coaching on either side it might be an exciting contest.

That an ordinance providing for some sort of registration of tuberculosis

once appeared among the fugitive essays of the municipal legislature was known to the JOURNAL, and the tradition of its futile operation was also in memory. Without having examined its text we were of the opinion that the ordinance was, like the Philadelphia resolution, a sort of Quaker gun. If, however, it is an effective instrument, let us get it into action.

Nearly two years ago the present health commissioner, Dr. Bosley, made a public declaration of his belief that tuberculosis ought to be registered. His able and experienced assistant, Dr. Jones, is of the same opinion. The subject has been discussed time and again in the medical societies and at public meetings, and not a voice has been raised against the proposition.

If the opposition is silent, how can its strength be measured except by the experiment? If the official leaders believe that tuberculosis ought to be registered; if public opinion, so far as it is expressed, is wholly in accord with that view, and if an operative law on the subject is already in existence, what are we waiting for?

A famous politician once published a plan for the resumption of specie payments. His plan was to resume.

To have been somewhat ahead of other great municipalities in recognizing the need of registration of tuberculosis is somewhat to our credit. It is a Baltimore characteristic to be early in the recognition of new ideas. Many a great conception has had its first realization here, but the profits have usually been first realized elsewhere. Early at the post and late under the wire is about our style. It is a long time since 1895, and we are not yet registering tuberculosis.

BIRTH INSURANCE.

THE American Mothers' Association has a plan for counteracting the lamented tendency to limit the size of American families. A corporation has been formed under the laws of Massachusetts for the purpose of paying a benefit upon the birth of a living child to any policy-holder in the American Mothers' Birth Insurance Company.

Any woman of good moral character may be a member of the Association and a policy-holder in the Birth Insurance Co. by paying the annual dues and the monthly assessments. The policy-holders are divided into two classes, one paying a monthly assessment of $3, and entitled upon the birth of a living child to a benefit amounting to from $200 to $500, according to the number of assessments paid. Policy-holders in the other class pay assessments and receive benefits in half these amounts. The officers of the company serve without pay, and are sanguine enough to say that the assessments will not increase, but will in all probability be reduced within three years. Policy-holders are entitled to benefits after not less than five premiums are paid, but only one monthly premium is charged during the first seven months of the life of the policy, so that no benefit can be claimed within ten months from the date of the first premium.

The motive of this organization is to provide for the contingent expenses of childbirth and to discourage "race suicide." So far the enterprise is entitled to approval—to admiration even. The mathematics of the plan are, however, quite incomprehensible to us. The policies will naturally attract

only women of child-bearing age who are married. (From the circular-literature it does not appear that marriage is an essential qualification.)

The utmost income derivable from 1000 women would amount in the course of twenty-five years to $900,000. This amount will pay 1800 of the maximum benefits and 4500 of the minimum benefits. Forty-five hundred claims would mean an annual birth-rate of 180 per 1000 policy-holders. The birth-rate per 1000 married women of child-bearing age, according to the United States census of 1890, was 184, and a deficiency of 25 to 30 per cent. was admitted in the birth registration. One of two things must therefore happen—the policy-holders must experience a less birth-rate than that of the country at large, or extra assessments must be levied. The rate for the country includes, of course, the sterile marriages. These will not be represented among the policy-holders in the American Mothers' Birth Insurance Co.

The lowest number of children to a marriage experienced in any country is that of France—three children. The average duration of marriage is not known either in this country or in France, but, on the basis of three children per marriage, premiums would have to be paid for forty-two years in order to produce three maximum benefits or for sixteen years to produce three minimum benefits. Unless the fertility of marriage among the policy-holders should fall within the deplorable limits of French experience, the company must fail to meet its claims out of its premium income.

The average age of the policy-holders will have an effect upon the percentage of claims arising, but an average age less than forty years will not enable the claims to be paid out of the premium income. According to Budapest experience, the chances of a child within a year are, for married women aged twenty, 40 per cent.; aged twenty-five, 32 per cent.; aged thirty, 24 per cent.; aged thirty-five, 17 per cent.; aged forty, 7 per cent. With respect to newly-married women the figures are even more discouraging, for 1000 newly-married women whose ages are between forty and forty-four may be expected to produce 214 babies within a year. As the company appears to have figured on a birth-rate considerably less than 170 per 1000 policy-holders, it must provide a fund largely in excess of the premium income or fail to pay its claims.

THE STORM OF JULY 12.

Barber, barber, shave a pig.
How many hairs will make a wig?
Four and twenty; that's enough.

It is reported that there was a violent windstorm in Baltimore on Sunday, July 12. In proof that a strong wind blew, some two or three hundred houses are exhibited in a shocking state of disrepair. There was, in fact, a breeze on July 12, and it wafted light objects about. It made things interesting on the water for a short time, and it had sport ashore with wheeled vehicles and umbrellas, but only houses fell down, and brick houses only. The debris consists of bricks only; just a few bricks.

No one was seriously hurt. If more bricks had fallen, the story would have been different. Many houses in Baltimore contain enough bricks to crush the life out of their inmates—careless people, who probably enjoyed the dalliance of the gale, without dreaming that their too, too solid walls might crumble.

Medical Items.

The roof garden of the Philadelphia Hospital has been opened. It is intended for the treatment of tuberculosis.

Trinity Medical College, Toronto, and the Toronto University School of Medicine will amalgamate as a part of the provincial university.

Dr. Norman McLane Harris, associate professor of bacteriology in the Johns Hopkins Medical School, has accepted a call to the University of Chicago.

Dr. Robert Giering and his mother, Dr. Anna Giering, have been indicted by the grand jury of Baltimore city for making improper publications in a medical paper which they print.

Dr. Eugene F. Cordell has been made professor of the history of medicine in the University of Maryland. This is the first professorship of the subject to be established in this country.

Three cases of plague occurred in San Francisco in July. The campaign against the disease there is now an honest one and sure to be effective. Truthful and prompt reports are made.

A milk commission has been organized and incorporated by the Medical Society of the District of Columbia. Its purpose is to establish standards of purity for milk sold in the District.

Philadelphia has replaced the volunteer medical inspectors of schools with paid physicians. The schools are to be visited daily, and the visiting physicians receive salaries of $750 a year.

The Hawaiian Board of Health will undertake a campaign against mosquitoes. An epidemic of dengue is now in progress at Honolulu, and mosquitoes are believed to be the agent of its distribution.

Cleveland has opened a municipal sanatorium for consumptives. The building was formerly a smallpox hospital. About fifty consumptives were admitted when the renovated building was opened on July 1.

By the will of Mrs. Harriet Lane Johnston, Johns Hopkins University will receive $90,000 for the suport of three free scholarships. The National Homeopathic Hospital receives $1500, and the Church Home and Infirmary $2000.

A surgeon of the United States Marine Hospital Service on duty at San Juan, Porto Rico, was recently drugged with chloral in a glass of lemonade. His apartments at the Hotel Inglaterra were robbed while he was unconscious.

The health officer of Rochester, N. Y., has been dismissed by the council upon the recommendation of a committee of safety. After investigating the recent outbreak of smallpox, the committee concluded that the health officer had been inefficient.

Dr. George Blumer has resigned as adjunct professor of pathology and bacteriology in the Albany Medical College. He is succeeded by Dr. R. M. Pearce of Philadelphia. Dr. Charles K. Winne of Mt. Wilson, Md., has become instructor in histology.

The month of July passed with the admission of but one case of smallpox to Quarantine Hospital. The outbreak of smallpox at Cumberland, which has counted up nearly sixty cases in the past three months, seems about over. But two cases remained in the Emergency Hospital on July 23.

The new building for the epileptic patients at Springfield is now under construction. It is to be 200 feet long, with a wing at either end twenty-five feet wide. The width of the central portion will be fifty feet. The building will be two stories high, and constructed of brick and terra cotta.

Maragliano has announced an immunizing serum against tuberculosis. It is introduced beneath the skin of the arm, and produces a tuberculous ulcer, with a general reaction, lasting for a few days. The ulcer heals, and the vaccinated individual is thereafter resistant to tuberculosis.

Mr. and Mrs. Harold McCormick have endowed a new medical journal to be known as the *Journal of Infectious Diseases*. Its editors will be Profs. Ludvig Hektoen and E. O. Jordan of the University of Chicago. The first number will be issued in the fall. The value of the endowment is $125,000.

The daily papers of Philadelphia quote Dr. Martin, chief of the Health Department, as declaring that one of the great needs of that city is a modern system of disposal of sewage. He proposes, it is said, the evaporation of sewage and the sale of the solid residue as a fertilizer. The sewage is to be sold at a profit, too!

The third district branch of the New York State Medical Association has passed a by-law engaging upon certain conditions to assume the defense of suits against its members for malpractice. A contract must be signed vesting the counsel of the Association with the authority to conduct the defense. The Association does not bind itself to pay damages.

A citizen of Toronto, a Christian Scientist, was recently found guilty of manslaughter in permitting his boy of sixteen to die of diphtheria without medical attention. The case was appealed, and the Court of Appeals holds that the judge at the first trial delivered a proper charge to the jury; that the term "necessaries of life" as used in the criminal code includes medicines and medical treatment.

Mr. Jonathan Hutchinson, whose trip to the East for the study of leprosy has been widely chronicled, is more firmly than ever convinced that eating fish is the most important factor in the causation of the disease. His views have not yet made a considerable impression upon the profession, but it is said that he has recently been addressing his argument to the general public, and with some effect.

Dr. Allen J. Smith, professor of pathology in the University of Texas, has been elected to the chair of pathology in the University of Pennsylvania to succeed Dr. Simon Flexner, who resigned to become director of the Rockefeller Institute. Dr. Smith graduated from the University of Pennsylvania in 1886, and for several years thereafter was demonstrator of pathology in the medical department.

A fresh typhoid-fever scare at Ithaca has brought to light the fact that the water supply is polluted. The attention of the city authorities has been called to the existence of typhoid fever on the banks of Six-Mile creek, and "energetic steps are being taken to remove the sources of pollution." Some months ago the same authorities took some steps of the same sort for the same reasons. There is virtue in steps.

By a piece of adroit maneuvering a law federal has been passed which permits the Secretary of the Treasury, upon request of the Secretary of Agriculture, to direct the customs officers to obtain samples of imported food products, drugs, and liquors for examination. When any such articles are found to be dangerous to public health, or falsely labeled, or articles whose sale is prohibited in the country where they are made, the consignments are seized and either destroyed or returned to the exporter.

The first instalment of the Fourth of July casualties includes, according to the *Chicago Tribune*, 52 deaths in 110 towns on the national holiday from fireworks. The number of injured was 3665, and of these 1576 were injured by fireworks, 319 by cannons, 1121 from firearms, including 559 toy-pistol accidents, and 768 from the premature explosion of gunpowder. The runaways caused by the noise were 81. The fire losses amounted to over $400,000. The second instalment of the story has not yet been written up. It will include more than 100 deaths from lockjaw and a few hundreds of maimed and blind.

A man in Cincinnati named Deen has a novel scheme for creating a fresh-air fund for city children and at the same time making a good profit for himself. He has employed a lot of young women to sell "shoe-shine" tickets for him on the representation that the proceeds are to be used as a charitable fund for giving excursions to crippled children. The tickets are good for a shine at any one of a number of establishments in the city, and cost ten cents each. The excursions are given, and the enterprising philanthropist also realizes a handsome profit for himself, for naturally a great many tickets bought upon such representations are never used. The man admits that he is in the business for the sake of its profit to him, and says that he will extend his operations to other cities.

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A CASE OF PURPURA HEMORRHAGICA WITH HEMORRHAGE INTO BRAIN AND DEATH.

By Arthur Wegefarth, M.D.,
Baltimore.

Under this name may be considered the cases of very severe pupura, with hemorrhages from the mucous membranes. The affection known as the morbas maculosus of Werlhof is most commonly met with in young and delicate individuals, particularly in girls, but cases are reported in which the disease has attacked adults in full vigor. After a few days of weakness and debility purpuric spots appear on the skin and rapidly increase in number and size. Bleeding from the mucous surfaces sets in, and the epistaxis, hematuria, and hemoptysis may cause profound anemia. Death may take place from loss of blood or from hemorrhage into the brain. The following is a case of a young man, apparently in the best of health, who was attacked by this dreadful malady and died in less than one week from hemorrhage into the brain:

Frank L. F.——, twenty-one years of age, American born, unmarried, clerk, temperate habits, five feet ten inches in height, and weighing 160 pounds; healthy surroundings and well nourished.

Family History.—Father died at the age of thirty-nine from an operation upon an abscess in the region of rectum; hemorrhage continued from incision for five days, when death resulted. His mother, two brothers and two sisters are living in perfect health.

Previous History.—Patient never had any serious illness. When a child of two years, after an angry spell, he vomited a quantity of blood. He had an occasional nose-bleed, which did not last long, and would stop of its own accord.

Present Illness.—On Sunday morning, February 22, at 10 A. M., the patient walked into my office and gave the following history: Twelve days previous he started with a nose-bleed, which began slowly at first, but continued for quite a long time, when he became frightened at the great amount of blood lost, and sought aid from

a physician. The medicine prescribed gave no relief, and he began to stuff cotton into his nose in order to stop the flow of blood. Bleeding began from the left side first; later on, from right. This hemorrhage would almost stop for a short while—that is, the quantity would decrease—but always a drop or so could be seen oozing from the nose. The nose continued to bleed for about six days, when it was accompanied by a bleeding around the gums and also from deep down in the left ear. This continued for about five days in connection with the bleeding from the nose, when he noticed a "breaking out," as he called it, under the skin, and which frightened him and caused him to call on me for professional advice.

Physical Examination showed a man well developed, five feet ten inches tall, weighing 160 pounds. He has small hemorrhagic spots on face, arms, body, and legs. A very large hemorrhage is seen on middle of left arm about three inches in diameter, and upon both legs midway between the knee and ankle were large hemorrhagic spots the size of a silver dollar. Acne spots on the back, neck, and face were filled with blood which had clotted, making a black, ugly appearance, especially on the back, which was literally covered with these hemorrhages. Upon examination of the mouth, blood could be seen oozing out along the gums, and large spots of blood under the mucous membrane of the whole cavity of the mouth, some spots as large as a ten-cent piece. The lips were very much disfigured by the hemorrhage underneath the mucous membrane of the upper and lower lips, giving them the appearance of having been burnt by nitrate of silver. The bleeding from the nose was very profuse, and the flow came from both sides. There was no bleeding at this time from the ear. He complained of a little headache and malaise, and his bowels had not been moved for two days; otherwise he said he felt well and continued to go around as usual. Examination of his heart revealed nothing abnormal. Spleen not palpable; blood by microscopic examination revealed nothing abnormal; temperature normal; pulse 72. Urine, straw color, no albumen nor sugar; perfectly clear. No signs of gonorrhea or syphilis.

I at once made an astringent application to the nose and plugged both nares with cotton, ordered him sulph. magnesia to open the bowels, and followed this up by ergot and the bromides. At 8 P. M. I saw him again. The flow from the nose had subsided, and the patient felt much brighter.

Monday, February 23, 10 A. M.—Blood has stopped; feels well; no temperature; pulse normal; called at my office; no plug in nose. 8 P. M., no bleeding from nose; slight bleeding from gums; will not stay in house, saying he does not feel sick.

Tuesday, February 24, 10 A. M., called at the office; no bleeding; said he would not see me at night, as it was not necessary. I thought bleeding had been permanently checked.

Wednesday, February 25, patient called at the office at 10 A. M.; reported that bleeding from the nose began the night before about 9 o'clock, while playing cards at his home; continued to bleed all

night. I noticed upon examination that his face had an increased number of hemorrhagic spots; blood was flowing freely from the nose and gums, and his condition was about the same as upon the first visit, with the exception of increased headache and malaise. I called in Dr. W. S. Thayer for a consultation at 11 A. M. the same day, Wednesday, 25th. The examination showed the same condition as I have already described upon the first examination. Calcium chloride, 20 grains every three hours, was suggested in connection with the bromides and ergot. He was ordered to go to bed and stay there for awhile, which he rebelled against, as he said he did not feel ill enough to go to bed. His appearance was that of one in good health, and he did not show any signs of being anemic from loss of blood. About 8 P. M. the same day I was sent for, and the patient complained of a pain on the right side of the head. Light aggravated this pain, and he remarked if the pain persisted he would go crazy. Bleeding from the nose and gums continued, blood flowing through the cotton which was used as a plug. His pulse at this time was full and very strong. He had a slight elevation of temperature, and his face was congested, as were also his eyes. Ice was ordered to his head; codeia, ergotine, and acetanilid in capsule form were ordered; calcium chloride was continued; solution of adrenal extract was applied to gums and nose.

Thursday, February 26.—Patient complained of numbness of left hand and wrist; was in a drowsy condition; very many more spots on face and under the conjunctiva; small hemorrhages have appeared in right eye. When called he arouses and talks, then falls back into a stupor. Temperature 100°, pulse 60; no paralysis; moves both arms, hands, and legs; bleeding continues from nose and mouth. Early on the previous night vomiting began of a quantity of black coffee-ground fluid, and for this reason capsules were discontinued. The calcium chloride was continued by the nurse during the night. Condition very bad at 10 A. M. At 12 M. had Dr. Thayer in consultation again, and the injection of 200 c. c. of a 2 per cent. gelatine solution was given. Pulse 56, temperature 100°; no paralysis at the present time; he is drowsy, and vomits at intervals. By enema a stool was brought away which showed signs of blood. An enema of salt solution was then given, which was retained for some time.

5.30 P. M.—Prof. Wm. Osler and Dr. W. S. Thayer saw the patient with me. The condition had gradually gotten worse. Paralysis of the left arm had come on; pulse 56, respiration 22; right pupil dilated; stertorous breathing; semi-unconscious condition; gelatine solution repeated; calcium chloride continued.

8 P. M.—Patient gradually growing worse; left leg paralyzed; vomiting of blood, and bleeding around plug of cotton. No apparent relief was noted after the use of adrenalin.

11 P. M.—Right arm is not moving; patient gradually getting worse.

3 A. M. I was called to the house and noticed a general paralysis. The hemorrhage into the brain slowly continued, and the patient gradually grew weaker until 8 A. M., when death took place.

No autopsy was held. The purpuric spots were more marked than before death. Spots ranging from the size of a pinhead to three inches in diameter could be seen, and large blebs of blood under the mucous membrane of the lips and the mouth were noted. Small hemorrhages under the ocular conjunctivae were more marked. Vomiting of blood and passing of blood from the bowels had occurred. The urine towards the last became cloudy, showing red-blood corpuscles.

Rest, hemostatics, adrenalin, injections of gelatine, calcium chloride, ergot, cotton tampon in nose—no measures seemed to have influence over the bleeding.

Diagnosis.—In the diagnosis of purpuric hemorrhage it is important to exclude scurvy, which may be done by the consideration of the previous health, the circumstances under which the disease develops, and by the absence of the swelling of the gums. The malignant forms of infectious fever, particularly smallpox and measles, are distinguished by the prodromes and higher temperature.

Etiology and Pathology.—The theory of the bacterial origin of hemorrhagic purpura is gaining ground in some quarters, but culture from the blood and internal organs are often negative, and when bacteria are found they are usually organisms known to be extremely common.

Unquestionably acute infections play an important part in many cases of Werlhof's disease, and it is probable that ptomains and leukomains, as well as the toxins of various infectious diseases, may cause a grave purpura. In the apparently neurotic cases it is difficult to exclude toxemia; in fact, the nervous disturbances may be the result of such condition.

General considerations offer little interest. Females are oftenest affected, and pregnancy and the puerperal state apparently predispose to this disease. The age of predilection is from fifteen to thirty years. The disease attacks individuals apparently in good health, but more commonly the debilitated are the victims.

The prognosis is grave. Occasionally in favorable cases the patient recovers in from ten days to two weeks.

The treatment is symptomatic, as the etiology of this disease is still obscure.

Astringents and tonics are perhaps useful. Thyroid extract has been used with good results. Subcutaneous or intravenous injections of a 2 per cent. solution of gelatine have been used with success.

Local applications of adrenal extract have given very good results, arresting the hemorrhages from the mucous membrane.

HOW SHOULD A MODERN CITY PROTECT ITS WATER SUPPLY?

By Charles O'Donovan, M.D.,
Baltimore.

One of the chief problems of modern sanitary engineering is to supply to a municipality an abundance of pure water, sufficient for all immediate purposes, and still able to withstand the stress of varying and unpropitious weather conditions. It is the last half of the above proposition that causes most of the attendant anxiety. The daily amount required by a given number of consumers is capable of easy calculation within limits not widely separated. The element of uncertainty is the supply, as it is so readily affected by a multitude of different agencies, sometimes similar in origin, sometimes arising from causes diametrically opposite. A prolonged spell of dry weather or a severe flood in the watershed may equally reduce the available supply; the growth of aquatic plants in sluggish streams, in the appearance of bacteria of sewerage after heavy rains, may render water unfit for drinking. So that when a city proposes, as most cities do, to furnish its inhabitants with water, it should so select the sources of its supply that purity and sufficiency of water shall be undoubted. But this is not all; cities grow in population, so that each year an increasing amount will be required of the supply, and also in the growth of population there is a constant tendency to spread out into suburban development. This has become more and more evident since the general introduction of electric passenger transportation, so that at present every considerable city is surrounded by a more or less densely populated area of village growth, bringing with it as an inevitable consequence the pollution of the watercourses which drain those areas. This has led to large engineering projects, by means of which the cities have been enabled to give up nearby sources of water supply, and have, always at very considerable cost, sought for fresh supplies of greater volume and purity in streams or rivers draining large areas of country, and so far removed from suburban development as to avoid that source of contamination. At the time that such selection is made this move is usually satisfactory, but this happy state of affairs does not last forever. In some cases the forests of the watershed are felled and the land is taken up for farming purposes, changing a fairly constant flow of pure water into a reduced supply in dry weather, varied by a flood of liquid mud after each rainstorm; in other cases the manufacturer notes the water-power going to waste, from his point of view, and is led to establish a mill of greater or less size on the source of supply, around which soon appears a village, sometimes a town, from which empties into the stream with each heavy rain whatever filth may have accumulated in its streets or yards. It takes but a few years of such fouling, or a

few months if the mill towns become populous or numerous, to produce among the citizens who, miles below, drink the diluted sewerage any of the diseases that are water-borne and which may exist in the trespassing towns. The next move on the part of the municipality under consideration is the establishment of an elaborate filtration plant to purify water that should never have been allowed to become contaminated, but should have been jealously guarded against impurity by the users for their own sake and to be handed down to their descendants, to whom is left the task of paying the bonded indebtedness incurred in the introduction of the water supply. Can it be a matter of surprise if the succeeding generations fail to appreciate the good sense of their forefathers, who have shown such utter lack of civic wisdom by saddling them with a debt which produced water that might have been all-sufficient, but which through crass neglect had become so filthy as to require subsequent filtration? We have a nearby example of this utter disregard of the future in the experience of the citizens of Baltimore, who having found that their former supplies were becoming insufficient and contaminated, introduced, at very considerable cost, a new and adequate supply from the Gunpowder river, spending in the course of this improvement thousands of dollars for the purchase of water rights, for which it is commonly believed more money was frequently paid than the absolute value of the farms to which the water rights pertained, instead of buying outright the adjacent land, and so securing absolutely what may become, and often has become, a source of pollution to the affluent streams. The contamination to be feared and guarded against in municipal water supplies is twofold—bacterial or alluvial, the former appearing as the result of decomposition of animal or vegetable matter, or from drainage into the watercourses of privy or barnyard overflow, the latter being collectively the great mass of waste brought down by rains from plowed fields or decaying forests, with parts of fences or haystacks added, according to the severity of the storm producing the flood. While from the standpoint of the physician the first group is the one most considered in speaking of water impurities, from the standpoint of the hydraulic engineer the last is infinitely more important. So that in any proper consideration of the subject it is necessary to advert to each of these topics, and each in some way reacts upon the other, as we shall see.

Bacterial contamination is easily avoidable in theory, but practically it is best avoided by careful attention to the probable results of silt contamination, for even in waters that have become polluted bacterially we find that sedimentation will eventually cause the disappearance of all germs if allowed to proceed undisturbed for a sufficiently long time. This is, in part, what is aimed at by impounding our drinking water in large reservoirs, where sedimentation takes place very thoroughly in the placid water. It is undeniable that this cannot occur if the reservoir shall have become filled with silt, so that it represents no longer millions of gallons of water

in a state of quiescence, but rather a shallow stream flowing over a muddy bottom almost directly into the mains under the city streets. Another method of avoiding bacterial contamination is by a thorough system of patroling the entire watershed so that all possible sources of pollution may be located and access of filth to the water sources may be denied. This may be carried out satisfactorily if the system is thorough and the remedies conscientiously applied. But those of us who have lived in the country, and who have so often seen in wet weather the rich but filthy ammoniacal liquor leaching from the barnyards, no matter how protected, and pouring into the nearest rivulet, know that it is impossible to protect watercourses from such contamination, especially if any villages or towns exist within the watersheds. Barnyard leachings form pollution sufficiently nauseous to think of without referring to the far more disgusting and deadly products of washed-out privy vaults. I contend strongly that the only way for a city to escape this manifest danger is by destroying utterly the source of such contamination. No mistaken idea of trade advantages, or market for the sale of its wares, or source from which a few mill-owners may gain a profit, should stand in the way of the cry of the comparatively helpless citizens for pure water. As well might a man feed tainted food to his ignorant and trusting family because it is cheap or is bought at a nearby grocer's for sake of saving a few lazy steps. The law recognizes the imperative right of a municipality to so protect itself; it is the supine inadequacy of its application and enforcement that allows such nuisances to continue. In this matter I cannot accept half measures that hypnotize us into a fatuous dream of security. I do not believe that any system of inspection can control the forces of nature, and I have too often seen the cleansing effect of a heavy rain. No matter how much diluted, such filth must eventually produce evil results if used as drinking water by human beings. In this way several diseases are spread, notably typhoid fever and cholera, and probably dysentery and some forms of diarrhea. These are proven and accepted facts that no longer pertain to the realm of speculation. So that a city that permits the continuation of such pollution of its water supply simply invites disease to enter its doors, not innocently or ignorantly, for the note of warning has been sounded again and again by sanitarians, but culpably and with criminal negligence—a sowing of the wind that must produce the harvest of whirlwind. These sources of contamination must be removed even if it become necessary to purchase by condemnation the offending properties. This will not often be necessary, for a city can bide its time and gradually acquire the objectionable property as in the course of time it is offered for sale. Land is sold very frequently in our country, and a patient and wealthy purchaser can slowly but surely eliminate the plague spots from its surroundings at prices but little above the actual value of the land. In cases where factories have produced villages, usually very dangerous localities, a stringent application of the laws safeguarding the water

supplies may render it expedient for the corporation of the factory to sell out to the corporation of the city and remove to a locality more salubrious for both. At first sight this may savor of hardship, but the immense interest at stake on one side makes the small invested capital of the other dwindle into insignificance.

But what of the alluvial contamination? Can that be remedied in any way? This is indeed a more serious problem in both aspects, for this not only contaminates the water supply, but it soon fills up the reservoirs and so reduces almost to nothing the impounded water upon which reliance is placed in times of prolonged dry weather, so that a system of reservoirs whose capacity may be represented on paper by billions of gallons may contain actually only a hundredth part of these enormous figures, even when apparently full. The shoaling has gone on at the bottom, hidden under the water, and is discovered by the indignant taxpayer only when he receives notice in August to be careful not to waste too much water. It must be remembered that rainfall is distributed very unevenly during the year. When we need least water most is sent, and when we are hot and dry and dusty we get least; nor is that all, from the water engineer's point of view, for what we do get in summer is most apt to come in violent storms which tear up the earth of cultivated fields and overthrow trees and fences, so that the water that is delivered at the impounding dam to be turned into the city supply is fit only to be allowed to escape through the sluices, because it is liquid mud mixed with debris rather than water that is desirable. After such storms it requires often a week before the water becomes clear enough to be sent to the reservoirs, but during this time the city consumption goes on regularly, and it requires but little thought to see how near to a water famine a very dry spell of weather or a succession of severe storms may reduce a municipality.

As a remedy for this condition of things I believe that the modern, progressive, expanding city should have recourse to very extensive purchases of property throughout the watershed. This may seem a large proposition, but we are at present dealing with large propositions. No American city considers itself completed; each hopes and fully expects to grow in population and importance to an indefinite degree. No man can foretell the size to which we may attain. But no matter what may be the growth of a city, one of its chief needs must be always pure water in quantities that must increase as population increases. Why, then, should we hesitate to look squarely at the problem or fear to offer the true solution because of its apparently heavy cost? Land purchase need not be made all at once. Conditions that have been endured thus far may be gradually ameliorated, making the burden lighter by extending the period of payment. Fortunately for us who have to bear the burden, the land that should be acquired first is that which is of least value intrinsically—the steep hillsides that are annually plowed by the patient farmer, evidently as a pastime, for his efforts to raise any crops upon them must necessarily result in loss. With every

storm his seed and fertilizer, together with about six inches of the surface soil, are washed into the valley streams and thence on to the primary reservoir, there to be deposited by sedimentation, reducing by so much its capacity. Such land is in the market for sale every day, and naturally at very moderate terms. It is practically useless to the farmer, but in proper hands and scientifically treated it would be very valuable as a part of a water supply. Let such waste, bare hillsides be clothed with forests, and mark the difference. The winter snows melt slowly, sinking into the porous soil to saturate it to repletion, and reappear gradually in crystal rivulets from numerous springs; the rains of summer no longer dash against bare and unprotected soil, furrowing it with great ravines and washing it into the valleys, but falling through the luxuriant foliage upon the moss-covered earth, repeat what had occurred during the winter's thaws, sinking into the ground to replenish the unfailing springs. So that what was useless is easily converted by Nature's own process of timber growth into a source of comfort to thousands. But the gain need not cease here. The science of forestry is only in its infancy in this country, but already we know that in the forests that may be planted upon such reclaimed waste-places, by the proper application of the principles of forestry, most excellent preserves may be created, easily accessible to the centers of consumption, taking the place of former tracts of timber land wantonly destroyed. I venture to predict that such reservations, parks in part, water sources in chief, will in the future rank amongst the most valuable and productive assets of civic investment. The disappearance of our forests is everywhere lamented, and is already so serious that great national forest reservations have been created by congressional enactment about the sources of many interior rivers chiefly with a view to irrigation. My proposal is exactly similar on a smaller scale and for purposes of water supply to cities. Having destroyed the filthy factory village and clothed with deep foliage the barren hillsides, the process of acquiring land should be gradually extended throughout the watershed. Having ascertained by topographical survey the most desirable acquisitions or the most objectionable features, the additional purchases should be made accordingly. Rolling country could be converted into pasture lands and meadows cropped in grass. Many farms need not be acquired at all because of absence of silting from level lands. These great pastures and meadows would afford sustenance to vast herds of cattle from which could be drawn a large portion of the city's milk supply. As they would pasture on the city property, whether they belonged to the city or were private property, paying a rental, these herds would be easily reached by city inspection and readily under city control. I foresee in this ideal condition an opportunity for an enormous improvement in the city's supply of milk. This conversion of a farming country into a land of forests and pastures would have the greatest influence upon the water supply derived therefrom. It requires no argument to convince any man that mud freshets would

disappear and that very rarely would such water flow into the primary reservoir as would be unfit for immediate distribution to the storage lakes or to the city mains. The enormous waste by evaporation from unprotected surfaces would be checked, and from the woodland and the turf would come to the streams of the valleys practically all of the water that would fall from the clouds, thus vastly increasing the absolute quantity of the supply. And every drop of it would be clean. No typhoid germs, no cholera or dysentery would be lurking in the limpid streams, but an abundance of sweet water would constantly flow from the city's own magnificent domain.

SUGGESTIONS CONCERNING THE PREVENTION OF SERIOUS COMPLICATIONS IN EAR DISEASES.

By Hiram Woods, M.D.,

Professor of Diseases of Eye and Ear, University of Maryland; Surgeon at Presbyterian Eye, Ear and Throat Charity Hospital, Baltimore.

READ BEFORE THE MARYLAND MEDICAL AND CHIRURGICAL FACULTY, APRIL, 1903.

SYNOPSIS.—Primary Infectious Otitis Media. Definition of Serious Complications of Aural Disease, and Their Production. Earache Only a Symptom. Its Relief—Removal of Cause. Diagnosis of Cause by Objective Examination Associated Infectious Disease and Thermal Line Important Factors in Acute Ear Diseases. Early Drainage Through Membrane. Cleanliness in Ordinary Ear Manipulations. Significance of Wide Range of Temperature in Chronic Otorrhœa.

EXPERIENCE teaches that otology is not a subject which enthuses an audience of general practitioners. The ear and its diseases are looked upon either as too unimportant to merit much attention or too technical to allow study by anyone except a specialist. I shall trespass a little upon your time in hope of disproving both these views. I hope to demonstrate that the ear presents a field of study and work which is not only open to the general practitioner, but which, in many cases, he must enter.

It shall be my aim to avoid such matters as demand much special or technical training, and to present only those which every physician must consider unless he refuses to undertake any ear work. Even then, as I hope to show, he runs the risk of indulging in a great deal of useless treatment in efforts to combat certain symptoms until appearance of otorrhea makes the mortifying diagnosis. I am led, moreover, to believe the subject timely, because aurists everywhere are seeing many cases of dangerous, indeed vital, complications of otitis. That many of these are due to epidemics of influenza, and that in some the dangerous trail is laid so early as to be unavoidable, must be admitted; but that in others there are symptoms which, if appreciated at the time, point the way to safety is equally undeniable. I have no doubt that many otorrheas diag-

nosed as secondary to grippe are in reality primary middle-ear infections, the systemic symptoms appearing before pain or other local disturbance calls attention to the ear. While pain is usually the first symptom of ear infection, it is not always so. Temperature and pulse may be affected by pathologic conditions in the tympanum with persons whose thermal line and pulse-rate are susceptible to slight influences before mechanical effects produce suffering. I have seen in consultation children in whose ears objective changes characteristic of otitis media had been found only because the physician had looked for them as a matter of routine when searching for the cause of fever. Evacuation of a single drop of pus from a painless tympanic cavity has stopped septic temperature. I mention this only to show that the physician *must* regard the ear as a part of his diagnostic territory, just as the aurist has to study pulse, temperature, pain, associated physical conditions, heredity, environment, etc., if he is to arrive at a correct diagnosis and prognosis, and must have a working knowledge of the principles of clean surgery if he is to cure many of the cases which come to him. Otology and general medicine dovetail all along the line. It is the duty of both physician and aurist to work on that basis. I shall confine the limits of this paper to infectious otitis media, or inflammation of the middle ear. By the serious complications of otitis media I mean permanent deafness, more or less complete, establishment of chronic otorrhea, extension of infection from the tympanum to neighboring structures—mastoid process, meninges, brain, blood vessels, specially the lateral sinus—and general septic infection. How are these complications produced? It is to be borne in mind that the tympanic cavity is bounded by bone on all sides except the outer, which wall is the drumhead; that its roof separates the cavity from the cranial vault; its posterior wall communicates with the mastoid cells, these being separated from the lateral sinus groove only by a thin bony plate; that the anterior wall is perforated in its upper and anterior extremity by the opening of the Eustachian tube from the naso-pharynx; that the mucosa of the drum is rich in blood vessels and serves as periosteum to the walls; that the means of communication between the drumhead or outer wall and the oval window of the inner wall, opening into the internal ear, is the chain of ossicles, and that the air necessary in the tympanum for its functional activity comes through the Eustachian tube. The ossicular chain and, to a less degree, the tympanic air are the means by which vibrations pass from the membrane or drumhead to the internal ear. It is easy to see that some degree of deafness, due to defective conduction, would necessarily result from hyperemia of the mucosa, exudate into the cavity, or defective ventilation from the Eustachian tube. Some deafness is practically always present in acute otitis media, but after perforation of the membrane, surgical or ulcerative, hearing improves. Why is it not always restored? I believe that the chief reason is that the pathological conditions are allowed to remain long enough to produce thickening and adhesions, and so permanently impair the

motions of the ossicles. The acute cases associated with the greatest degree of transient deafness show infectious processes in the attic or upper part of the cavity. It is in the upper part where the articulations are situated. Here, too, the connective tissue is most abundant; here on the posterior wall is the entrance to the mastoid cells, and this upper division of the tympanum or attic is nearest the cranial cavity. Infection usually finds it way into the tympanum through the Eustachian tube, and is directed most naturally back along the attic to find lodgment in the rich connective tissue and mucous folds. How, then, permanent defect in hearing is produced and how the other complications are brought about is not hard to understand. Whether there shall be permanent complication, and what it shall be, will depend upon the virulence of the infection and what particular structures are involved. A mild infection, with prompt relief by drainage through the drumhead, leaves nothing. Delay may cause only defective mobility of the ossicles or ankylosis of the stapes, and a greater or less degree of deafness and tinnitus. Deeper involvement of the connective tissue, with necrosis of the periosteum, leads to bone disease, and the basis is laid for chronic otorrhea. Here is also formed a nidus for endless reinfection, and so continuance of the discharge. All that is needed to produce mastoiditis, with its attendant threatening of the sinus, meninges or brain, is extension of the infection back along a passage which is normally present. Whether the mastoid inflammation shall assume the form of acute empyema or the more chronic eburnating form, slowly destroying the cells and shutting off the easiest way by which mastoiditis can become manifest, becomes a question of virulence of infection and resistance of tissue. There remain only the intracranial complications and otitic sepsis. The former result from death of continuous bone tissue, as a rule, and less frequently from infection through lymph channels. Blood poisoning from tympanic absorption, without mastoiditis, involvement of the meninges or blood vessels, is rarely seen, yet it must be recognized as possible. What lessons do these facts carry? To my mind the most important is this: Whenever a man is called to a case of evident, or even possible, acute otitis media he is face to face with a malady fraught with serious or even fatal possibilities. Early recognition may do nothing but save his patient from defective hearing. Early recognition may be necessary to save life. Comparatively few cases are seen in their incipiency by the aurist. The first symptom is usually pain, developing either spontaneously or in the course of an infectious disease. After futile efforts to relieve, the physician is summoned, and *relief of pain* presents itself as his first duty. Our text-books give this as the primary therapeutic indication. If one limits his conception of this relief to securing rest for his patient, and places reliance upon narcotics and the local use of heat, he will find pretty large doses of morphia necessary, and heat effective only to the extent of making the pain somewhat more bearable. In addition, he may be, and probably is, losing valuable time. Pain should be relieved, of course; but the

means adopted should be indicated not by the presence of pain only, but by a careful study of the accompanying objective changes in the drumhead and naso-pharynx, history and systemic disturbances. I ask attention, then, to earache as a symptom of a definite pathologic condition and to removal of this condition as its treatment. A convenient division for study will be between earache occurring in an otherwise healthy person and in one already ill with an infectious disease. While not always the case, this is practically a distinction between acute catarrhal inflammation of the tympanum and an infection which will produce suppuration. As a rule, when severe earache occurs during the course of such disease as tonsillitis, influenza, or one of the exanthemata, the trouble is probably acute suppurative otitis. There are exceptions, and the diagnosis is not difficult. I shall speak of this later under "reflex pain." At present I want to consider pain as a symptom of catarrhal otitis media, due, possibly, to a mild infection, but certainly of much less severity than that causing the suppurative form. Often this pain is recurrent. Children and some adults suffer from relapsing earache, lasting a few hours. Then the pain disappears, with or without discharge, and they are well until the next attack. If such patients are old enough to give reliable answers, and functional examination be made between attacks, hearing is usually below the standard. This is specially observable in tuning-fork tests, the prolongation of bone conduction and defect in perception of low tones pointing to middle-ear disturbance. Gradually hearing power diminishes for conversation. There is developing, in other words, permanent deafness. At these examinations the Eustachians are pervious and nasal respiration unimpaired. Yet post-nasal vegetations are apt to be found in children, or some form of chronic pharyngitis in adults. Observe one of these relapsing cases during an attack, and objective conditions are different. The drumhead shows injection of its vessels either along the malleus handle or, I think, more frequently at the upper and posterior angle of the membrane. Politzerization does not inflate the drum, or does so imperfectly. If coryza is present, nasal respiration is impeded. Over and over again I have seen the treatment to be outlined relieve at once, while morphia and heat do the little they do only after a long time. If nasal respiration is impeded, re-establish it by the application of adrenalin solution, one to three or four thousand, applied to the inferior meatus. Cocaine in 10 per cent. solution, or even weaker, will accomplish the same thing, but its effects are not so lasting. Then, either by Politzerization or catheterization of the tube gently inflate the middle ear. If the catheter is used, and it is best, cocaine helps a great deal. My friend, Dr. Samuel Theobald of Baltimore, suggested some time ago a solution of a half-grain of the alkaloid atropia, one grain of alkaloid cocaine in a drachm of the oil of sweet almonds as a local application in the auditory canal with imperforate membrane. Dr. Blake of Boston has advocated a solution of atropia and cocaine salts in glycerine. The beneficial effects of these preparations is undoubted in appropriate

cases. In cases of suppurative infections they are, I think, useless. Their failure to relieve is often a guide in diagnosis. Blake attributes their therapeutic activity to the analgesic effects of the drugs combined with the osmotic action of a heavy liquid outside the membrane in producing and maintaining depletion of the blood vessels. One precaution is necessary—if the drumhead be perforated there is theoretical danger of toxic effects from passage of solution to the throat through the Eustachian. Personally I think this is not very great. To summarize concerning this variety of earache, its significance and treatment, determine by objective examination the appearance of the drumhead, permeability of nasal passages and Eustachian. Re-establish these if they are impaired, and apply in auditory canal some such oily preparation as is suggested. Between attacks get rid of the throat or nasal lesions if possible. This is specially important in children who have post-nasal vegetations.

As a symptom in acute suppurative otitis media, pain, when considered alone, is, I believe, of little importance. Its relief, unless accomplished by recognition and removal of its cause, is a bad therapeutic step. Earache occurring during an infectious disease is good presumptive evidence of suppurative otitis media. If accompanied by elevation of temperature following chilly sensations, this presumption is strengthened. When, without accompanying disease, one notes, with sudden severe ear pains, elevation of temperature and such symptoms as he would at once attribute to infection if occurring with pain in any other part of the body, he is almost always dealing with an acute otitic infection. Its prompt recognition and treatment on correct surgical principles—in one word, by drainage—may save life. Certainly it is the one thing which will minimize the vital dangers which are too often noted when it is either too late to do anything or an important and difficult operation is demanded. What gives the clue to diagnosis? Again, objective examination of the drumhead. The deep-red discoloration of the pearly-gray membrane, loss of the usual landmarks—handle of malleus, light spot, etc.—and, possibly, bulging of the membrane, are all matters of easy observation, if one knows them when they come into view, and takes the trouble and feels responsibility for finding them. When found, drainage by incision, as indicated in infection anywhere else, is called for. I doubt if there is an operation fraught with greater possibilties for good, and more imperatively demanded when called for at all, than incision of the drum membrane. But it has to be *done*, not *attempted*. Local anesthesia is, in my experience, useless. Cocaine is not absorbed, and carbolic acid, while the most satisfactory anesthetic under the conditions, is not sufficient. The incision should be along the posterior border of the membrane and involve its entire length. Illustration by two or three cases will not be out of place. A baby eight months old had been ailing for two days, and occasionally crying without obvious cause. His physician diagnosed grippe on account of a temperature of 103. After two more days a slight right otorrhea appeared. Only then was the ear thought of. Still pain continued, as evi-

denced by continued spells of crying. Inspection of the ear showed a teat-like perforation in the upper posterior angle, from which thick pus exuded. Enlargement of this by incision put an almost magical stop to the alleged attack of grippe with "secondary" otorrhea.

A boy of five years of age had acute tonsillitis. On the fourth day his temperature suddenly shot up to 104°. In an hour he had right earache. I was summoned the same night in consultation by the attending physician, and told to "come ready to incise the drumhead." Treatment was outlined by the physician, not the aurist. The little operation, under chloroform, cleared the whole matter at once.

Three years ago I was called late at night to see a dental student at the University of Maryland who had had ear discharge three days. I found a young man of twenty-three in dreadful pain, with high temperature, paralytic external strabismus and other signs of meningitis. History showed that for three days before otorrhea appeared this young man had had earache. He and his roommate has used heat and morphia. No physician was summoned. I found a perforation similarly situated and conditioned to that described in the case of the baby. My friend, Dr. Tiffany, then professor of Surgery, had been called at the same time, but before he arrived I had the patient removed to the hospital, and although meningitis was undoubtedly present, I gave him the benefit of a free tympanic incision. Next morning Dr. Tiffany chiseled through an unaffected mastoid into the skull, uncovered a healthy lateral sinus, and exposed a large area of dura. General meningitis was found. The man died thirty hours after operation. Infection was from streptococcus. Was there ever a time when this life might have been saved? If there was, it was during those precious three days when heat and morphia lulled suffering, gave the patient and his overconfident roommate a false sense of security, and allowed infection to spread through lymph channels to the meninges.

I am pleading for thorough diagnosis rather than trying to elucidate proper treatment. This is bound to follow care in diagnosis. All cases are not typical, and the catarrhal and suppurative troubles shade off into each other. Catarrhal otitis can easily pass over by infection into the most dangerous disease. So, if one is uncertain, and knows how to incise the membrane, it is a conservative procedure.

A few words may appropriately be added concerning so-called "reflex" earache. It is not very common, yet in one infectious disease, acute tonsilitis, if often occurs. I saw recently in consultation a lady with this disease whose earache was atrocious, yet objective examination of the ear showed nothing abnormal. The drumhead was free from changes, and hearing was good. She obtained relief only after the tonsilitis had subsided. Elimination of ear infection in the diagnosis was all-important.

I am not unaware that I am writing from the standpoint of a specialist; that it can be said that I am requiring of the general

practitioner technical knowledge which the specialist is supposed to possess as a sort of divine monopolistic right. It is admitted that when a general practitioner, busy with a multitude of responsibilities, can readily secure the services of an aurist he is more than justified in not devoting time to learning surgical procedures which he can command at the hands of a more experienced confrere. Provided such a man feels his responsibility at the beginning of things, his position is safe. But all men are not so placed. In many sections there is no aurist, or possibly there may be what is worse than none—someone fresh from a six weeks' course in a post-graduate mill, whose equipment is not to be trusted by the side of the common-sense physician with years of observation. The latter learns how to make abdominal and gynecological diagnoses, and in so doing "trespasses," if the term be understood in its inoffensive sense, upon what somebody else may consider his field. If the general practitioner keeps out of everything which has been specialized, he will have a hard time to know "where he is at." When so placed that he must attend all kinds of cases he should know that the ear is just as susceptible to rational diagnosis as any other organ; that a small instrumental equipment and conscientious examination of a number of ears will acquaint him with normal appearances; that study of earache cases coming to him along lines I have tried to indicate will reward his efforts; that the work needed is no more difficult than he is compelled to do in other special departments, and the demands even more important than in some of them.

Besides early diagnosis of the cause of ear pains, and treatment for their relief based upon these causes, there are other means of preventing serious complications, to which reference may be made within the limits of my subject. Treatment of an aural discharge, after spontaneous perforation, is one of them. I shall only allude to it by saying that such discharges should receive careful antiseptic treatment. Cleanliness is the prerequisite. How it is obtained all text-books explain. One feature of cleanliness in ear work I do, however, want to emphasize. It is that manipulations and instruments should be clean. I am sure I have seen furunculosis of the canal produced by failure to observe this. I saw three years ago a most suggestive case. The patient was a young married woman in robust health, who consulted a physician for deafness in one ear. He found ceruminous deposit. It was removed, I learned from a reliable source, with instruments. The operation was very painful, and was followed by slight otorrhea. After three weeks, when I asked to see the case, the woman was desperately ill from septicemia. Although she had no symptom of mastoiditis or sinus thrombosis, both these troubles were looked for surgically. Whatever the explanation, the woman died of general sepsis. She was in perfect health before an awkward attempt was made to remove the cerumen by instruments. It could have easily been taken away by a stream of warm water. There was abundant evidence of traumatic rupture of the drumhead and otitis media. This was the only cause we could find for the septicemia. It seems to me that

dirty surgery is the most probable explanation. I use the case only to illustrate the truth that in ear work, as elsewhere, care is needed to avoid dreadful possibilities.

Three recent experiences lead me to add a word concerning the significance of the thermal line in cases of otorrhea. One I have already reported as a fatal case of sinus thrombosis in the *Proceedings of the American Otological Society* for 1900. The point I want to emphasize here is that for several days at different times during the course of a chronic otorrhea the boy had shown wide range of temperature. It had been attributed to malaria. He was in an attack of supposed malaria when seen by Dr. Carrico, who associated it with his ear, and sent him to the hospital. The child was dying of sepsis produced by streptococcus sinus thrombosis. A second case was a man upon whom I operated for mastoid empyema. He had remained at home for a month suffering from earache, while the mastoiditis pursued its course undisturbed. Fortunately, its course was outward. The reason assigned for delay was that each morning he had a temperature of 98° or 99°, at night of 103° or over. Sometimes he had a chill and sweats. Malaria was assigned as the cause, and quinine given. He recovered after operation. The third case was similar. A gentleman forty-two years of age with an acute otitis media, perforated drumhead and positive evidence of mastoiditis refused operation because he had been assured by his homeopathic physician, who attended him before I saw him, that his temperature jumps, irregular chills and sweats were malarial. Nothing but search for the plasmodia by Dr. Thayer, who did not find them, disturbed this conviction. Even then he submitted to operation with very bad grace, for he only half believed it. Mastoid empyema and exposure of the lateral sinus were found. Drainage effected the cure. It may be unnecessary here to remind one of such a fact, but irregular temperature jumps are not always malarial, and when they occur during the course of a suppuration they are suggestive of septic absorption. This is a most important matter in cases of chronic ear suppurations, for not infrequently the inner mastoid cells are infected, while the long suppuration has obliterated the outer by sclerosis. Hence the outlet is shut off, and there are no external symptoms of what is progressing inside.

I shall not lengthen this paper by illustrative cases. My object has been to show that otology is essentially a part of medicine; that examination of the ear should be a routine in cases of obscure infectious symptoms; that ear diseases often become serious because their cause is not appreciated early; that responsibility for this recognition rests upon the first man in charge of the case; that with no more effort than many physicians give, and must give, to other specialties in order to meet the demands made upon them, one can learn how to appreciate the importance of early recognition of aural troubles—how to recognize and, in most instances, how to treat them so as to prevent dangerous complications.

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Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

THE OCCURRENCE OF DIASTOLIC MURMURS WITHOUT LESIONS OF THE AORTIC OR PULMONARY VALVES.

Cabot and Locke (*Johns Hopkins Hospital Bulletin,* May, 1903) discuss the interesting question of the occurrence of diastolic murmurs without lesions of the aortic or pulmonary valves. In comparing the clinical records in autopsy findings in 153 cases they found that mistakes in diagnosis were most frequent in tricuspid regurgitation, and least frequent in aortic regurgitation. Nevertheless, in the past year they have met with four cases in which, largely owing to the presence of the diastolic murmur, aortic regurgitation was suspected during life, while at autopsy normal aortic valves were found. A brief summary of these cases and the autopsy findings follow:

Case 1. Uncompensated cardiac disease in an adult alcoholic. Heart slightly enlarged transversely. Visible arteries pulsate strongly. Pulse irregular; low tension. Systolic murmurs in aortic and mitral areas.

Diastolic murmur in third and fourth intercostal spaces close to left sternal margin. Urine of passive congestion (apparently). Blood normal. Death eleven days after entrance.

Cardiac valves and cavities normal. Aorta 8 cm. in circumference. Hypertrophy of left ventricle. Chronic intersticial nephritis. Other organs not remarkable.

Case 2. Three weeks orthopnea, with edema of legs and face, in a very anemic woman twenty years old (scarlatina in childhood). Red cells, 2,800,000; hemoglobin, 20 per cent. Marked transverse enlargement of heart. Pulse 120; regular, high tension. Diastolic murmur loudest over fourth and fifth left costal cartilages. Urine, 1460 c. c.; 1009 in specific gravity. Albumen, one-eighth per cent. No casts.

Hypertrophy and dilatation of the heart. No valvular lesion. Aortic valve 5.5 cm. in circumference. Kidneys show lesions of chronic glomerulo-nephritis. Other organs not remarkable.

Case 3. Woman, thirty-four years old; alcoholic; very anemic from profuse and frequent nose-bleed and from a recent post-partum hemorrhage. Red cells 840,800. Slight transverse enlargement of the heart. Diastolic murmur loudest over fourth left costal

cartilage. Systolic murmurs at aorta and mitral areas. "Flint" murmur at apex. Corrigan pulse, low tension. Urine of diffuse nephritis. Died in three days.

Fatty heart; valves and cavities normal. Fatty kidneys. Yellow marrow (fatty).

Case 4. Typical pernicious anemia. At entrance (after exertion) a diastolic murmur along left sternal margin. Later this murmur disappeared. Death four months later.

Ordinary lesion of pernicious anemia. Heart fatty. Valves and cavities normal.

Cabot and Locke next discuss diastolic murmurs met with in other conditions from those of injury or deformity of the aortic or pulmonary valves, namely, those met with in association with dilatation of the aorta, with intense anemia, with tuberculosis of the lungs and pleura, and in other conditions involving an abnormal suction or pulsion exerted by the heart upon neighboring portions of the lungs—in other words, cardio-respiratory murmurs, as an accentuation of a venous hum transmitted from the neck veins or produced in the superior vena cava, and in association with mitral disease and dilatation of or hyper-pressure in the pulmonary artery. The first three of these conditions are the only ones which are discussed at length, and a number of cases under each category is reported from the literature. Their conclusions are as follows:

1. Diastolic murmurs without organic valve lesions are not uncommon in connection with dilatation of the aorta, localized or diffused. One of our cases seems to be of this type.

2. When the pleura and pericardium are adherent, owing to tuberculosis or other causes, diastolic murmurs are occasionally audible in the precordia. Such murmurs are notably affected by respiration and position. They are probably due, in most cases, to suction or pulsion exerted by the heart upon portions of lung adherent to the pericardium ("cardio-respiratory murmurs").

3. In cases of intense anemia, when the red cells are reduced to or below 1,000,000 per c. mm., one occasionally hears diastolic murmurs not to be explained by permanent dilatation of the aortic ring nor as "cardio-respiratory murmurs," and not due to a diastolic accentuation of a venous hum.

The cause of these murmurs is obscure.

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ATYPICAL TYPHOID.

Romme, in *La Presse Médicale,* May 16, 1903, discusses a question of unusual importance at this time of the year—atypical typhoid. He does this in discussing Ewald's recent work on the subject; in fact, his essay is largely a reiteration of Ewald's views.

Typhoid fever is becoming more and more difficult to recognize in its early stages, for the old abdominal typhoid, with its three practical periods and with its typical symptoms, has become the exception, and infection with the Eberth bacillus now conceals itself under a maze of symptoms which often deceives even the best clinician. The gradual rise of temperature is seen less often, while a sudden rise, accompanied by a violent chill and suggestive of the onset of pneumonia, is now frequently met with. Sometimes the chill repeats itself daily, while the fever may take a distinctly hectic course. Ewald cites a case at length in which the patient complained of precordial pain, and physical examination showed dilatation of the heart, with a murmur, the case being considered one of malignant endocarditis, until a late Widal reaction showed what was the true diagnosis. In fact, in some cases it is so impossible to differentiate some of these cases of atypical typhoid from infectious endocarditis that the autopsy alone is able to settle the point. (In these cases a determination of the number of leucocytes per c. mm. and the relative proportion of the various forms would seem to be of great value.—B.)

Diarrhea was only rarely met with by Ewald in his cases of typhoid fever, and instead he frequently met with constipation, often very obstinate, sometimes lasting from four to eight days. In these movements the typhoid bacilli were found only five or six days after the beginning of the fever in many cases.

Rose spots are frequently absent, while other eruptions, such as labial herpes, pemphigus or pustular eruptions, are frequently met with. On the other hand, the nervous symptoms are peculiarly intense, and in some cases they may be for several days the only symptoms of the disease, diarrhea and fever being absent. Ewald reports one case where for six days the patient was in a violent maniacal condition, while on the seventh day the delirium disappeared, diarrhea and fever set in, and from that time on the typhoid ran a normal course. He mentions another case where for five days the only symptoms were delusions of persecution, and constipation and slight fever.

In these atypical cases Ewald not only makes serum tests, but also makes careful bacteriological examination of the stools. Unfortunately, by both these methods early diagnosis is often impossible.

As to treatment, Ewald depends on acid drinks and tepid or gradually cool baths, the latter of which he believes are chiefly useful because of their cleansing rather than of their antipyretic properties. As an antipyretic he uses quinine, while of the newer antithermic remedies he uses none except occasionally lactophenin and pyramidon. Ewald has had no personal experience with serum treatment of typhoid fever.

METHYLENE BLUE IN THE TREATMENT OF ULCERATIVE TUBERCULOUS ENTERITIS.

Rénon, in a recent meeting of the Therapeutic Society of Paris (*La Presse Médicale,* May 30, 1903), gives the results of the administration of methylene blue in the case of pulmonary tuberculous patients with intense and intractable diarrhea. He has used this method in a large number of cases, and has gotten very favorable results in four-fifths of the cases so treated. He administered the drug by mouth, giving 15 to 20 centigrams daily, either in one dose or three to four times daily, in proportionate doses. He gave it in the form of cachets mixed with four times the amount of sugar of milk, which makes the drug less irritating to the stomach. Under the influence of this form of treatment the movements of the bowels became much less, decreasing within twenty-four hours from fifteen or twenty to five or six daily, and often at the end of three days the diarrhea was succeeded by constipation. Rénon believes that this action is due to the favorable effect of the methylene blue upon the intestinal ulcerations, especially as regards the development of a secondary infection therein, and the result of several autopsies on patients so treated bears him out in this view. He also thinks that it is for this reason that irrigations with methylene blue are so useful in the treatment of dysentery or muco-membranous entero-colitis. He has also noted a marked diminution of temperature after administration of the drug in typhoid fever, and he believes that here also the beneficial results are to be ascribed to the influence of the drug in lessening the secondary infection.

REVIEW IN NEUROLOGY.

Under the Supervision of Robert Reuling, M.D., Baltimore.

The Cortical-Cell Changes in Epilepsy—Their Significance and Clinical Interpretation. L. Pierce Clark and Thomas Prout. *Boston Medical and Surgical Journal,* April 23, 1903.

The authors have limited their study of cortical-cell changes to such cases of epilepsy as show a well-marked hereditary tendency to the disease. All traumatic or cases due to thrombi or cerebral paralysis were excluded. The more or less remote sequences of the disease comprised in chronic cell-degeneration and gliosis will be taken up by them at another time, their articles taking up only the earlier cortical lesions, the immediate sequence of the cortical poisoning, and the epileptic fit.

They were able to study the cortex in eighteen cases, seven dying during status. All possible post-mortem changes were excluded

by obtaining the tissue very early, the longest time elapsing being seven hours, the shortest one hour. Absolute alcohol was used as the fixing and hardening agent, and the tissues were stained by the Nissl method. For comparative study sections of a normal brain were used. These were obtained from a case of accidental shooting, dying instantly, the tissue being placed in alcohol two hours after death.

The condition of the cells of the cortex, especially those of the second layer and other cells of that type, was most striking, and differed only in degree in the several cases of epilepsy. The cells were swollen, some being ballooned out to twice the normal size; the chromatic substance was almost entirely gone, nothing but a bare framework of the cell remaining; the nucleus was often swollen out of all proportion to the swollen cell-body. In the majority of instances the outline of the nucleus was difficult to define, all traces of the nuclear membrane having disappeared. The nucleus itself presented a finely granular appearance, and in many instances the nucleolus had been abstracted from the nucleus by the knife in making the section. This was brought about by the destruction of the nuclear network, giving the nucleolus a loose body within the nucleus, which is abstracted from it in section-making. It was a very frequent occurrence, especially in the status cases, in which condition the changes were most pronounced. For example, in the last case of status examined over 130 examples of nucleolar abstraction were found in going over one square centimeter of surface in a single slide. The importance of this artefact will be better understood when we consider that in examining thirty-two slides of normal brain tissue it was found but six times. They believe these facts point to a destruction and ultimate disappearance of the cell as a unit in the cerebral cortex. The involvement of the nucleus in a process which produces such vital changes in its structure is of most serious import. The nucleus is the highest biologic portion of the cell. As an organ of the cell, recent biological facts prove its high physiologic *rôle*. That is presides over the vital processes within the cell, and that without it the cell dies, are facts which are especially true of cells of higher types.

"The conditions found in these cases indicate cell-death, and teach something as to the manner of its occurrence. The real pathogenesis of epilepsy, however, is to be sought, first, in those hereditary and acquired conditions which produce an unstable nervous organism, and, secondly, in those products of faulty metabolism comprised in the various toxic and antitoxic agents which act as excitants to a poorly-developed nervous system."

From experiments and pathological studies the authors believe epilepsy is best explained as representing a highly-organized sensory motor reflex of the cerebral cortex. The bromides appear to

act upon the sensory, the afferent side of this reflex arc, either at the periphery or, what seems more probable, upon the sensorv type of cells of the cortex itself. Bromides control the fits by reducing the intensity of the afferent impulses to motor cells, which they believe to be immediately in the cerebral discharge. When bromides are given in toxic doses acute and chronic poisoning is produced quite identical to the immediate and remote effects of the disease itself. Additional evidence of the essentially sensory character of epilepsy is shown that bromides are of but little avail in those cerebral affections supposed to be largely motor in character, such as myoclonus, paralysis agitans, athetosis, and post-hemiplegic disorders of motility. The anatomical and physiological integrity of the large motor cells in the cerebral cortex, even after a life of long epileptic career which may end even in fatal status, is convincing proof of the autonomy of these elements. Probably the most practical lessons to be drawn from the study is that epilepsy is a diffuse lesion of the entire cortex.

An order of muscular march in the fit shows only the successive order of spread of discharge in the motor centers, and this remains identically the same for years, almost without exception. The ultimate disappearance of the involved cortical-cell element is the most serious clinical phase of its pathology. This fact explains many of the permanent symptoms of the disease, especially the slowness, awkwardness, and inco-ordination of muscular movements, which amounts in many instances to a paralysis in effect. The local and general exhaustion seen after local or general fits, especially in those parts which participate most in the discharge, are true exhaustion paralyses in type, but the chronic slowness, awkwardness, and inco-ordination seen in long-standing cases are really of the sensory type, in which the damage or loss of sensory elements not only permits cortical motor-cell overaction as seen in the fit, but also leaves these motor elements uninformed of the normal nature and character of movements required.

* * *

Extensive Cavity Formation in the Central Nervous System, Presumably Due to Bacillus Aerogenes Capsulatus. Emma W. Mooers. *Boston Medical and Surgical Journal,* Vol. CXLVIII, No. 13.

The pathological changes due to infections by the bacillus aerogenes capsulatus have in recent years received considerable attention, especially in the United States. The changes produced by this organism in the brain give rise to even a more remarkable condition than when it infects the liver. As the author points out, this cavity formation in the brain since 1870 has been termed the Gruyere cheese brain, and if the reader will refer to Mooers' origi-

nal article, the excellent photographic reproduction of the brain in her case will show what a close resemblance there is between the Gruyere cheese and this pathological condition in the brain. The following is a brief *résumé* of the author's case:

The patient, a man forty-nine years of age, had advanced general paralysis, having been in the hospital nine years. He was profoundly demented, with extensive paralytic evidences, and confined to bed. He was well nourished and weighed 168 pounds. The patient's condition continued unchanged until a few days before death, when an increased restlessness was noted. On the morning of the day he died there was discovered a marked abdominal distention, a temperature of 104°, and respiration 48 to 58. He rapidly failed, and died in the evening.

Autopsy twenty-four hours after death. The weather was hot, so body was kept in a cool room, with ice on the abdomen. Face and body in general appeared bloated, abdomen greatly distended, the entire skin of a dark bluish hue. On section there was a gaseous emphysema of the subcutaneous tissues in both thorax and abdomen. Gas escaped on opening abdominal cavity. The liver appeared spongy, pale and puffy, riddled with gas cavities; the spleen slightly so. In kidneys and heart muscle no cavities were seen, but both showed gas cavities and bacilli on microscopical examination. There was no pneumonia, no pleural or peritoneal exudate.

The brain presented at autopsy nothing but the usual condition found in advanced general paralysis—that is, a marked atrophy, especially in the frontal lobes (weight of brain 1070 gm.), and thickening of the pia. When put in formalin in toto it was found to float. The cord showed unusual thickening of the pia arachnoid from the thoracic region down, and a marked dark, purplish-red discoloration of the membranes. After brain had been six days in formaline frontal sections were made. The whole of the cut surface showed many cavities. These varied in size from 3.5 cm. to the smallest visible to the naked eye; the shape varied, being usually oval, but sometimes round; a few were slitlike. They were located in both gray and white matter. These cavities on microscopical examination were found to be devoid of a lining membrane; the walls were frequently smooth and clean cut, but there were many which looked slightly ragged. The tissue around the cavities showed no inflammatory reaction, though it often appeared compressed, and took a slightly deeper stain. The nuclei were sometimes, but by no means always, paler in these zones. The larger cavities were empty or nearly so. Somewhere along the edge of the walls of these were generally seen a few bacteria or an elongated mass of them. The smaller cavities almost invariably contained many bacilli. Only one kind of bacteria appeared to be

present. These were bacilli about the size and dimensions of the anthrax bacillus. They had round or nearly square ends, some stained somewhat irregularly, showing faintly-stained areas in the protoplasm. A clear halo could be plainly made out by partly shutting off the light, but no distinct capsules and no spores were seen; they were found in clumps, in short chains (rarely), in pairs and singly. The bacilli stained by Gram's method and by the ordinary aniline dyes. They are morphologically and in staining reaction identical with the bacillus aerogenes capsulatus of Welch.

These bacilli, besides being found in the membranes, cavities, and tissues, crowded in most places the small vessels so that often the blood corpuscles could not be seen. The changes in the spinal cord consisted briefly in a few very small cavities lying near clumps of bacilli, especially in the lateral columns of the cord. A few longer ones were found in the ventral horns, the cavities being much fewer than in the brain.

In conclusion the author states: "In the absence of any other demonstrable cause of death in our case, and in view of the rapid and extensive abdominal distention, with great rise of temperature, it seems possible that the invasion of the circulating blood by the bacillus was the cause of death by the production of toxemia."

* * *

A Case of Brain Abscess Due to Latent Typhoid Infection; Operation; Death from Cardiac Complications. G. W. McCaskey and M. F. Porter. Medical History and Diagnosis by Dr. McCaskey. *Philadelphia Medical Journal,* April, 1903.

A. T., a laborer, aged forty-four years. Health had always been good up to time of present illness, excepting that three years ago his nose was broken by violent butt from the horns of a sheep. Not unconscious, but badly stunned, but he apparently recovered from the injury without incident. Present trouble began with head pains three months ago; has increased gradually, being unable to work at times. Three months ago noticed tingling sensations in the left hand; these were persistent, and about the same time noticed that the fingers of left hand were very weak and evidently somewhat contracted. The left leg showed progressive weakness, and at time of examination was so weak that it would not sustain weight of body. Four weeks before examination he had a sudden discharge of pus from the naso-pharynx, estimated at about four ounces. This produced marked relief of pain, and since then there have been several discharges of a similar material followed by amelioration of head pain. Left forearm persistently flexed on the arm. Slight deviation of the tongue to the left; knee and elbow reflexes exaggerated on left side. Pupils equal; react to light and accommoda-

tion. Visual fields normal. Taste and smell unimpaired. No optic neuritis, but the vascularity of the left retina when compared with right was increased. Blood examination showed 6,000,000 red cells, with 90 per cent. hemoglobin, and 13,500 leucocytes. Increase of leucocytes was made up of neutrophiles.

Operation by Dr. Porter. Brain cortex exposed at the level of arm center from just in front of Rolandic fissure forward, the opening being about one by two inches, a horseshoe-shaped flap being made by the use of the trephine, Gigli saw, and Devilbiss instrument. After careful exploration an abscess was opened containing about two drams of pus. This was left to drain after the operation, the flap being turned back and sutured. Examination of the pus showed a profusion of rod organisms. On careful cultural experiments the organisms showed all the characteristics of the Eberth bacillus. Although no history of typhoid fever could be obtained, the authors are of the opinion that the patient most likely had a mild type of typhoid which was either overlooked or considered an ordinary mild febricula. The recovery of the patient seemed to progress very satisfactorily until on the morning of the seventh day after operation, when the patient suddenly complained of feeling very ill. He became very pale, his breathing was labored, with rapid heart action. He soon became unconscious, the heart's action becoming more and more feeble, death taking place very shortly after onset of symptoms. As no autopsy was obtained, the authors are at a loss to explain the true cause of death, but suggest that it was probably due to a septic endocarditis, with a cardiac atony from toxemia, an ante-mortem bloodclot probably forming in the heart, and perhaps had been forming for several days unrecognized.

* * *

Transient Unilateral Ophthalmoplegia Exterior of Peripheral Origin, with Atrophy of the Optic Nerve. Charles J. Kipp. *American Medicine,* Vol. V, No.

Mrs. E. E., aged thirty-five years, a very healthy-looking woman. No history of any illness excepting an attack of facial erysipelas, followed by falling out of hair. This occurred before her marriage. The first pregnancy resulted in miscarriage at six months following a fall. Second pregnancy resulted in birth of a healthy child at full term, which is living and well. The next pregnancy resulted in miscarriage at two months. The next year she gave birth to a healthy child, which died at nine months of cholera infantum. In each of the following two years she gave birth to a healthy child, both of whom died of diseases of the respiratory organs. Shortly before birth of these last two children she had paralysis of the right side of the face, which lasted two months and passed away. Five

months before visiting Dr. Kipp she gave birth to twins, one of whom died of cholera infantum, and the other is living and well. Soon after birth of these twins she began having severe pains over the right eye. This pain has increased steadily in severity. Two months ago first noticed dimness of vision of the right eye. Now she is blind in this eye. Examination revealed only light perception; pupil somewhat larger than that of left eye; otherwise the eye is normal in appearance. There were no changes in the fundus. The mobility of the eye was unimpaired. There was marked anesthesia of the skin of the lids of the ocular conjunctiva of this eye. The left eye was normal, and vision five-fifths. As she had pain in pushing the globe backward, the author looked upon the case as one of retrobulbar optic neuritis, and prescribed potassium iodide, 10 grains, three times daily.

Examination of urine showed neither albumen or sugar. She denied having had any symptoms of syphilis. Two weeks after first visit pain in eye much less, but there was a drooping of the right upper lid, which could be raised for only a second, and required much effort. A week later complete opththalmoplegia exterior of the right eye existed. The ptosis continued. There was no protrusion of the globe. The pupil contracted slightly when very strong light was used. This ophthalmoplegia continued for about two weeks after, when it completely disappeared. The optic papilla of the right eye has become quite white, the pupil being larger than the left, and the patient is blind in this eye. There was at no time a paresis or paralysis of the second branch of the fifth nerve. After relating several very similar and interesting cases from the literature, especially the cases reported by Wilbrand and Sanger in their book "Die Neurologie des Auges," page 321, he very naturally comes to the conclusion that this case was probably of luetic origin, a gummous process probably involving the region of the orbital fissure.

Book Reviews.

MEDICAL JURISPRUDENCE. By Dwight & Pederson. The Medical Epitome Series. Lea Bros. & Co.

This work is one of a series brought out by the publishers. This volume is intended only as a brief compendium of facts in connection with legal medicine. While it covers a large number of subjects, each is treated rather superficially. However, as a hasty review for examination or to refresh one's memory, it may be found useful to both student and practitioner. At the end of each chapter a series of questions are arranged suitable for quizzing. H.

MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

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BALTIMORE, SEPTEMBER, 1903

EPIDEMIC LYNCHING.

"Are we turned Turks and to ourselves do that
Which heaven hath forbid the Ottomites?
For Christian shame, put by this barbarous brawl;
He that stirs next to carve for his own rage
Holds his soul light. He dies upon his motion."

EPHEMERAL ailments have some times alarming symptoms, and, on the other hand, grave diseases are often long in progress before a touch of fear is laid upon the victim. A single alarming symptom has lately fastened the attention of thoughtful people upon the national health, and some of us are convinced that we have been out of health for some time, and have been negligent.

Two years ago, when the President of the United States was murdered by a silly youth, a great horror fell upon every sane mind in the land—a horror composed of many elements—but owing its most hateful blackness to a mere notion, the assassin's professed anarchy. Yet we have tolerated for years a kind of anarchy less atrocious, but more widespread, and quite as dangerous as that of Czolgolz.

There is a crime more foul than any murder, and its usual penalty is death at the hands of a mob, and without process of law. The name of this crime is rarely seen in print, and is seldom named among men. The details of it are never published; they do not become current in local gossip, and cannot be supplied by the imagination. The prevalence of the crime owes little, and its penalty not much, to suggestion. The bare news of an outrage upon a woman suffices to kindle the rage to kill. This rage is insensate, and its act is criminal, but its instinct is universal. Of the preaching against lynching for the "usual cause" very little has been quite sincere, and all of it futile; for you and I and all of us desire the letting of all the blood that carries this worse than bestial ferment.

But lynch law has of late been applied rather freely outside its tacitly conceded domain. In order to reach its victims, violent hands have been laid upon officers of the law; the lives of innocent persons have been endangered, and in some instances sacrificed; two negroes have been murdered because they failed to give information which they did not possess; a pas-

senger train has been riddled with bullets and bombarded with rocks. And now, after a few steps beyond our assumed line of exculpable indulgence, it is shockingly clear that we have all along been making experiments in anarchy. What awhile ago we called primitive justice has grown into epidemic lawlessness—a carnival of man-hunting. Too late we have recognized in the beast that we let loose a stark monster, whose prey we shall be if our backs are turned upon him.

The meat that brought our cub to these monstrouus proportions has been abundant and varied. Much of it has been furnished by the sympathetic souls who have spread abroad an epidemic of degenerate pity, promoting murder by preserving murderers. Red-blooded men have been moved by the incessant wailing of these anemic intercessors to give the criminal, and especially the capital criminal, another chance. These fiend-coddling sentimentalists have wasted in the name of compassion as much innocent blood as flows in the veins of crime.

Of a decenter kidney are the hundreds of thousands of American wage-earners who have done much to loosen the bonds of order. Theirs is a cause to which most men lend a genuine sympathy, and toward their performances have shown a very excessive forbearance. Able to hold the individual wage-earner in absolute subservience to the rules of the union, the labor organizations are, or seem to be, unable to prevent outrage upon the laws of the land. Deploring, or pretending to deplore, acts of impassioned violence, they have calmly pointed out to the highest federal officials that the laws of the United States appear not to conform to the laws of the union, and they have suggested a delicate method of avoiding a clash. To match this act of unapproachable effrontery will be the eternal despair of wealth, and of every other sort of arrogance. That riotous behavior of striking workmen which leaders deprecate is absolutely and relatively less culpable than the complacent and very superior contempt of law manifested by the leaders. If the minds of the leaders are so obsessed by delusions of grandeur, what is the mental state of the rank and file of labor? There is wit enough and grit enough in the ranks, to win and to hold fast the rights of workingmen. The cause was indeed so nearly won that the walking delegate saw the end of his occupation. Whereupon the sympathetic strike and the limited daily task were invented, and the walking delegate made alliance with the slouch to outvote the men of brains and character. A new and powerful tyranny drives organized labor forward on the insane quest not of a want, but of a want of a want. Men of wise counsel are nullified. They pay their dues and are absent from the meetings. They are enough in number and ability to break their bonds and to stop the foolishness; but it would for the time being prove an expensive struggle, and would besides be a fight for the rehabilitation of the slouch and the captain of the slouches, who well deserve what their folly will bring. The body of organized labor is inflated almost to bursting, with contempt of law. Times have been when it would have helped the cause of labor to be let a little blood. Just now labor needs to be let much wind.

Widespread as this open contempt of law undoubtedly is, it is no more prevalent than the less obtrusive indifference which is found at all social levels. One dare not say how far this paralysis has ascended, but having seen in one State a court postpone for mere convenience the consideration

of an unspeakable outrage, in the next adjacent State the courts idle while politicians played with gross and violent disorder, and in the next State adjacent a court doing its duty, to the amazement of all beholders, one may doubt if there is within the view of plain people any class of citizens who hold law or justice in very high esteem.

In the making of law there is little, and in its administration, not much to command the respect of plain people. One may be ignorant to fear it, and another enlightened enough to allow for its imperfection and still pay it a high regard, but the vast majority of us live between these two viewpoints, and we govern ourselves accordingly.

Such interests as the citizens have committed to the custody of the State are not relinquished unconditionally or without reserve. Anyone may at any time take the law, or any part of it, into his own hands. Whoever does so takes at the same time, and in equal measure, his life and his interests into his own hands, to be held or lost according to his own might. This is not so because it is anywhere written. It is so because it is so. Workingmen riot, employers make armed resistance, and lynchers do their bloody will because the bonds of order are so loose that men may, with impunity, use their own devices in preference to the remedies offered in the social compact. And just in proportion as the devices which they choose, are in fact better than those they refuse, their actions will be safe for today and tomorrow, and perhaps until after the reign of terror.

THE JENNER INSTITUTE OF PREVENTIVE MEDICINE DEGENERATING.

It is reported that the Jenner Institute of Preventive Medicine will change its name. The largest donor to the institute is said to favor the name, Lister Institute of Preventive Medicine. It is reported that the special meeting on the subject voted unanimously for the change, and that their action will be confirmed at a later meeting. No one can question the propriety of conferring such a mark of distinction upon Lord Lister, or upon the institute. But if Lord Lister were dead, one might say, that Lord Lister, were he alive, would protest against the displacement of Jenner's name for the purpose of giving ever so fit a distinction to his own. It might be a good idea to change the name of the institute at such long intervals as mark the rise of new men to similar and equal distinction. The honor thus conferred upon the great men of succeeding generations, would not diminish, but increase, rather, as the roll lengthened. As the matter is reported, however, it apears that the institute will simply drop the name of Jenner as a worn-out garment, and adopt the name of Lister, which is newer, and will perhaps wear better.

Jenner's fame really seems somewhat friable. No medical man's fame has suffered more widespread or more virulent detraction, and, on the other hand, few have been as much praised. At one time it was believed that his achivement had been permanently commemorated in a public monument, but the memorial disappeared, and that of a fighting man was erected in its stead.

Medical Items.

Dr. F. T. Miles died at his home, 514 Cathedral street, on July 30, 1903. Dr. Miles was one of Baltimore's most eminent physicians. He was a pupil of Charcot and Hulings Jackson, and the first neurologist in Baltimore. An account of his life will appear in our next issue.

Ten medical inspectors of the borough of Brooklyn have recently been tried upon the charge of having permitted premises to be disinfected while contagious diseases were still in progress. Three of the inspectors were dismissed, four were fined, one was censured, and two were exonerated.

The building now occupied by the dental department of the University of Maryland is to be replaced by a four-story building, 90 feet by 100. The two lower floors will be used by the dental department, and the two upper floors will be used by the medical department for laboratories. The cost of the new building will be $50,000.

The report upon typhoid fever and dysentery among the British troops in the South African war appeared in August. It is said to be a bulky volume, but that part of its contents which will apear most forcibly to the average mind is capable of very brief statement. The cost of typhoid fever is said to have been $20,000,000.

The legislature of New Hampshire passed an amendment to the medical-practice law which requires the physicians who reside outside the State and spend their summers as resident physicians at summer hotels to pass the State examination in order to qualify for practice. Most of the physicians affected by this amendment are residents of New York.

The capture is reported by United States Secret Service agents of a pension swindler who hails from Maryland. His name is said to be Jervis Maxwell Jewell, and he has been very successful in swindling old soldiers. He has operated under many aliases—"Dr. Frances," "Dr. T. B. Scott," "Dr. M. H. Russell," "Dr. W. H. Hunter," "Dr. C. M. Black."

It was recently the trying task of Dr. George Ryerson Fowler of New York to operate upon his own son for appendicitis. The son, who is himself a surgeon, insisted upon his choice of an operator, and the father had the fortitude to consent. Both have extraordinary cause to rejoice at the successful issue. Many years ago Dr. Lewis A. Sayre operated upon his son for hip-joint disease, but such things are and must always be rare.

Dr. William M. Welsh, for many years physicians in charge of the Municipal Hospital in Philadelphia, is to be succeeded by Dr. B. Franklin Royer. Dr. Welsh will continue to be connected with the hospital as a consultant. Dr. Martin, director of the City Health Department, gives as the reason for the change the necessity for a resident physician in charge of the Municipal Hospital. Dr. Welsh could not fill this requirement of residence.

The oleomargarine manufacturers have discovered a means of coloring their product which defies chemical detection. As the presence of added coloring matter cannot be demonstrated, this imitation of butter must be passed by the revenue officers at the minimum tax of one-quarter of a cent a pound. The tax on artificially-colored oleomargarine is ten cents a pound, and the saving is said to have led to a great increase in the output of oleomargarine colored to resemble butter.

Smallpox is not diminishing in Philadelphia. In the week ending August 15 there were five deaths among thirty-six cases of smallpox. Two physicians have been fined for failure to report cases of smallpox. It is by no means likely that smallpox will again become so widely prevalent in Philadelphia as it was a year ago. The Department of Health is now well organized and very well officered, and, with such popular support as it is entitled to, should master the situation.

A national antialcohol congress will assemble in Paris on October 26, and will continue in session for three days M. Casimir Perrier will be the honorary president. This will be the first national convention on the subject of alcoholism to be held in France. The congress will first review the prevalence and the effects of alcoholism in France and the influences now active against it, and will then discuss the means of effecting an organized campaign against the vices of alcoholism. An attempt will be made to combine all existing temperance organizations into one federation under the direction of a permanent committee.

A Philadelphia family under quarantine on account of smallpox refused to allow a child suffering with the disease to be removed to the Municipal Hospital. The Board of Health maintained quarantine, but refused to furnish, at the city's cost, the means of sustenance. At the end of a week the head of the family took habeas corpus proceedings, alleging that he was restrained from work, and that his family was starving. The Quarter Sessions Court upheld the Board of Health and dismissed the writ on the ground that the Board of Health had the right to establish and maintain quarantine, and that the city had provided a means of relief by maintaining a municipal hospital for infectious diseases.

The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland will be held at Blue Mountain House September 24 and 25, 1903. The Western Maryland, Baltimore & Ohio, Pennsylvania, and Maryland & Pennsylvania Railroads have all offered the courtesy of a special rate of a fare and one-third for the round trip from any points on their respective lines, and tickets will be good from September 23 to September 30, inclusive. The hotel grants a special rate of $2.50 per day, and besides furnishing gratis a fine meeting hall is preparing unusual entertainment for its guests. We are informed that the circular letter recently sent to all members of the faculty has brought forth a satisfactory response, and that by the 20th of August accommodations had been reserved by more than fifty physicians. Twenty of these had stated that they would be accompanied by their wives, which raises the number of persons registered above seventy at that date, and shows that the social features provided by the program committee are appreciated. The Western Maryland Railroad will provide special cars on its regular excursion train of September 24 (leaving Hillen Station at 9.15), reserved seats in which will be assigned by the committee in the order of registration. Those who have not answered the letter referred to, but who expect to attend the meeting, should correspond with Dr. H. O. Reik, 5 West Preston street, regarding tickets and hotel accommodations at the earliest possible moment.

Preliminary program of the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland, to be held at the Blue Mountain House, Blue Ridge Mountain, September 24 and 25, 1903 (subject to alteration): Thursday, September 24, 2 P. M.—1. Call to order by the president, Dr. E. F. Cordell; 2. "The Climate of the Blue Ridge Country and Its Bearing Upon Health and Disease," Drs. R. Tunstall Taylor and Warren H. Buckler; 3. "What the Country Physician Can Do to Prevent or Limit Epidemics of Typhoid Fever," Dr. John S. Fulton; 4. "The Best Means to Employ for the Early Diagnosis of Typhoid Fever," Dr. William Osler. At 4.30 P. M. carriages will be taken for a drive to High Rock, Mt. Quirauk, and Ragged Edge. Thursday, September 24, 8 P. M.—Scientific and business session.—1. An address by Dr. Chas. Wardell Stiles of the United States Marine Hospital Service; 2. "An Explanation of the 'Principles of Ethics' Adopted at the Last Meeting of the American Medical Association," Dr. Wm. H. Welch; 3. "Was It Wise for the American Medical Association to Change the Code of Ethics?" Dr. D. W. Cathell; 4. "The Organization of County Medical Societies and Their Affiliation with the Faculty," Dr. Chas. M. Ellis; 5. "Amendments to Our Constitution and By-Laws Necessary to Harmonize Our Government with that of the American Medical Association," Dr. Samuel T. Earle; 6. "Desirable Medical Legislation and How to Obtain It," Dr. E. N. Brush; 7. "Needed Amendments to the Medical-Practice Act," Dr. J. McP. Scott. Friday, September 25, 9.30 A. M.—1. "An American View of the Recent Meeting of the British Medical Association," Dr. John Ruhrah; 2. "The Medical Aspects of the Baltimore Geographical Society's Expedition to the Bahamas," Dr. C. A. Penrose; 3. "The Diagnosis of Affections of the Pancreas," Dr. Eugene L. Opie; 4. "Intravenous Injections for the Cure of Septic Conditions," Dr. Jos. Hume. Friday, afternoon session, 2.30 P. M.—1. "The Geographical Distribution of Disease," Dr. Thos. H. Brayshaw; 2. "Tuberculosis of the Urinary System in Women—A Report of Thirty-five Cases," Dr. Guy L. Hunner; 3. "Omental Suture for Ascites," Dr. Jos. H. Branham; 4. Unfinished portion of business program. On Friday evening a reception and musicale will be tendered the president and members of the Faculty by the manager of the Blue Mountain House. Other social features have been planned for the entertainment of the ladies attending the convention, and short trips to points of interest may be taken between sessions by the doctors.

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A CASE OF FILARIASIS OBSERVED IN MARYLAND.

By Wm. F. Lockwood, M.D.,
From the Clinical and Pathological Department of the College of Physicians and Surgeons.

THE occurrence of a case of filariasis in a State north of the tropical countries is important enough to be recorded, but before presenting the case a few facts concerning the distribution and biology of filaria will be stated.

The worm has been frequently observed in Australia, South America, China, India, Africa, and the West Indies.

In order to preserve the species, filaria Bancrofti, an intermediate host, is necessary, and that obliging insect, the mosquito, harbors the embryo in its tissues. Both the malarial mosquito, anopheles, and the field mosquito, culex, can act as host for the embryos. It was formerly supposed that the embryos infected water supplies when the egg-bearing female mosquitoes died, and that when taken into the human stomach the embryo worms penetrated the walls of the stomach and entered the lymphatics. It has been recently shown, however, that the embryos penetrate the stomach wall of the mosquito, and finally enter the proboscis of the animal. The mosquito by means of the sting, infects the human body again, and the adult worms enter the lymphatic circulation, where embryos are reproduced. The adults never leave the lymphatics, but the embryos enter the blood-current, especially during periods of rest on the part of the patient. They can be easily observed on microscopic examination, and the photomicrographs give an accurate idea of their appearance.

The adult worms occlude the lymphatics and produce stasis of the lymphatic fluid. This produces the lymph scotum, elephantiasis, various dilated glands and lymphatics, and, through rupture of the lymphatics, causes chyluria, chylous ascites, and chylous hydrocele.

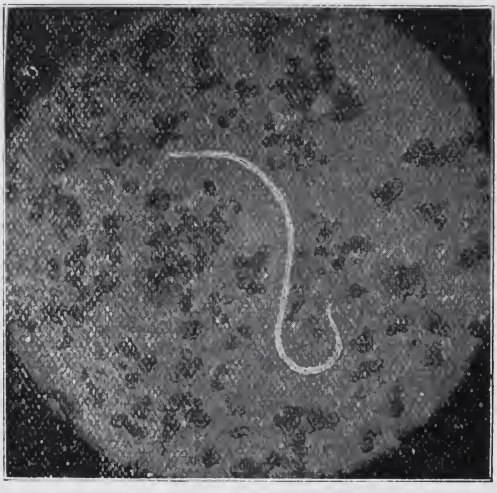
Lothrop and Pratt[1] have made an interesting study of a case occuring in Boston in a young man of twenty-two, who had lived on the island of Barbadoes. The spermatic cord and globus major of

the epididymis were greatly enlarged from dilatation and thickening of the lymphatics. The brother of this man was also incidentlly examined for filaria, and many embryos were found in his blood. He had no symptoms of disease.

Opie[2] has also described a case imported from the West Indies to Baltimore. The man, aged twenty-four, was admitted to the Johns Hopkins Hospital suffering from pain and abdominal distension. An operation was performed, and pus and fibrin were found in the abdominal cavity. The patient died later, and the autopsy showed an extensive new growth in the retroperitoneal tissue. This extended into the pelvic cavity and involved the spermatic cord and the epididymis. The microscopic examination showed that the structure consisted of dilated lymphatics.

CLINICAL HISTORY.

The interest in this case depends mainly upon the accidental discovery of filaria made during the examination of the blood for malaria.



FILARIA SANGUINIS HOMINIS—LOCKWOOD'S CASE.

J. de S., aged nineteen, a native of British Guiana, was admitted to the Baltimore City Hospital August 19, 1902. He had recently arrived from Colon, and during the voyage he and seven of his fellow-sailors had been attacked, within two days of each other, with a fever. Two of them died after reaching Baltimore. The following history was obtained from him:

His family, including both parents and nine children, besides himself, were all healthy. He had had swelling of the parotid (?) gland, with suppuration, at the age of five years, and on four subsequent occasions, always requiring incision through the mouth for the evacuation of pus.

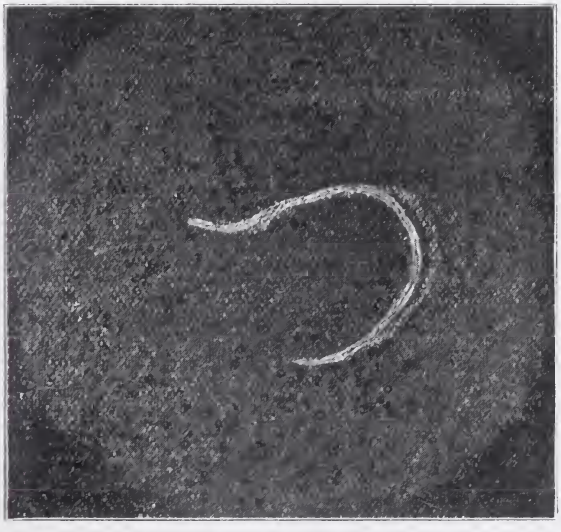
Seven years before he had had a fever which lasted a month or more, the nature of which he did not know. He acknowledged repeated attacks of gonorrhea, complicated once with suppurating inguinal glands, but denied syphilis.

He complained of constipation, extreme weakness, and aching of the bones at the time of admission. Examination showed a urethral discharge, with slight enlargement of the inguinal glands. The liver was not palpable. The area of dulness was normal.

The splenic dulness was increased and the spleen was readily palpable. Nothing else abnormal was elicited from the physical examination.

Repeated blood examinations for malaria were negative until August 17, when numerous aestivo-autumnal organisms were found. The first examination, which was made just after the patient's admission at 9 P. M., when his temperature was 102.8°, showed numerous filaria.

These were constantly present in subsequent examinations until



Filaria Sanguinis Hominis—Lockwood's Case.

August 21, when their absence was noted. The patient was out of bed for the first time, and had been moving about before the examination was made.

August 22 filaria were found in abundance, the blood specimen having been obtained while the patient was in bed.

August 23 no filaria were found. The patient was going about the ward. No further observations were made, as the patient insisted that he must leave the hospital and go aboard his vessel for the return trip.

Quinine was withheld until August 17, when it was given by the

mouth and hypodermically to combat the malarial poisoning. The urethritis was treated locally with a 2 per cent. solution of protargol.

I am indebted to Dr. John S. Fulton for the photograph which accompanies the brief account of this case, and to Dr. W. S. Evans of the City Hospital house staff, who called my attention to the filaria.

LITERATURE.

[1] *American Journal of the Medical Sciences*, November, 1900.
[2] *American Journal of the Medical Sciences*, September, 1901.

THE CARE OF THE INSANE.

By Frederick Peterson, M.D.,
President of the New York State Lunacy Commission.

ADDRESS BEFORE THE NEUROLOGICAL SECTION OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND, JANUARY, 1903.

My first acquaintance with insanity began as resident physician of the Buffalo General Hospital. This was a general hospital, but there was no State asylum there, and the nearest State asylum was at Utica. The Buffalo General Hospital was used as a reception hospital for the insane. We received insane patients, although we had no special provision for them. We had a pavilion there which was used indiscriminately for typhoid fever or diphtheria or insanity or any other class of cases that should be isolated. We might have taken care of the insane for weeks or months if we had had a suitable pavilion. There is nothing about the care of the insane which could not have been carried on in this general hospital, for it served as a reception hospital to a limited extent. Subsequently I became pathologist to the Buffalo State Hospital for the Insane, which was in process of construction, and which was completed about 1881 or 1882, and there I became more familiar with the care of the insane in the State hospital system. Two or three years later I went to the Poughkeepsie State Hospital for the Insane, and remained three or four years previously to settling in New York. So for a period of twenty years I have been very familiar with the condition of the insane in the State of New York, and I have known all the superintendents of all the hospitals there very well and most of their assistants, and I can say that whatever progress has been made in the State of New York has been in a great measure due to the superintendents of these hospitals, who have always been alive to any opportunities for making progress and to suggestions from outside. Twenty-three years ago, at the time that I first became acquainted with the asylum system in the State of New York, there

was no scientific work done in the hospitals in the State of New York which was of any particular value. There were some clinical studies and some good papers contributed to the old *Journal of Insanity,* but nothing that we would call strictly scientific in the modern sense of the term. There were no pathologists in any of the hospitals. There was one man at Utica who had the position of pathologist, but he was, I understand, neither a physician nor a pathologist, but a physiological chemist. He did some work which was interesting in its nature, but which would have no special standing at this time, and did not have at that time. There were no training schools for nurses in the whole State system. The first one was started at Buffalo, and, I believe, this was the second one in this country, the first one having been established by Dr. Cowles at the McLean Hospital. Restraint was in general use throughout the asylums, and to a considerable degree at Utica, where they had what was known as the "Utica crib." It was much such as a child uses, only it had a cover. The patient was put into it when he was violent: they kept him there as they do the little canary birds they sell in boxes on Grand street. There was not even a foreshadowing of the rest cure for nervous exhaustion. The use of rest, of massage, hydrotherapy, and electricity were not in vogue to any extent. A large majority of the insane were in county houses—in the almshouses and in special county asylums that were adjuncts to the county houses—and their condition was indescribably bad. There was no surgical or laboratory work; they had no laboratories in connection with the hospitals. A surgical operation was at that time considered, as a rule, inadvisable in cases of insanity until the patient had recovered. Nowadays if an operation is advisable it is done at any time during the course of the mental disorder, for such a procedure contributes, of course, to the patient's ultimate recovery. There was no woman physician in any of the hospitals. The patients were brought to the State asylums by police officials very often in a state of intoxication. I have myself observed such instances. Three or four deputy sheriffs would come intoxicated bringing women with acute puerperal mania or something of that sort. There were only four or five hospitals in the State at that time besides the county almshouses; now there are fourteen State hospitals for the insane, two asylums for the criminal insane, and twenty-three private hospitals—thirty-nine institutions in all, every one of which is under the jurisdiction of the Commission in Lunacy, which consists of three members—a medical member, a legal member, and a layman. This body has complete charge of and responsibility for the care of 25,000 insane in all of these State and private hospitals. In the State hospitals, in addition, it has the financial responsibility and business management, and supervises the expenditure of $4,000,000 or $5,000,000 every year. In private

institutions the Lunacy Commission simply has the power of inspection, but absolute power as to revoking licenses and driving them out of existence if they do not take care of the insane in a proper way. In the two criminal insane asylums it has simply the power of inspection to determine that the criminal insane are well taken care of, and has nothing to do with their finances.

The improvements which have taken place during these twenty years have been largely inaugurated and carried out by the people connected with the asylums themselves and by those whom they have instigated to help them, by the Commission in Lunacy, and the State Charities Aid Association. We have now complete "State care." No insane (except in the private institutions) are cared for in public institutions other than the State hospitals for the insane, and the patients are supported by the State. Practically no restraint is now found in the State hospital wards. Occasionally there are cases where restraint is necessary, but restraint has been practically abolished throughout the State even in private institutions. They have the open-door system to a certain extent in all the State hospitals and in the private institutions. We have abolished barred windows as much as possible—that is, in certain wards. Where twenty years ago there was one training school for nurses for the insane, there are now fourteen training schools in the fourteen State hospitals and one training school for nurses in a private institution (Bloomingdale), making fifteen training schools for nurses for the insane. These nurses are trained in every department of nursing. They not only receive special instruction in the care of the insane, but are instructed in general nursing and everything pertaining to surgery, so that many of them graduate and remain in the service or go out to do private nursing throughout the State of New York as general or special nurses. In all of the hospitals women nurses have been introduced into some of the male wards—a step which especially promotes the welfare of the sick in the infirmaries and tends to make the wards more homelike and comfortable. Patients, instead of being brought to the asylum by police officials, are now sent for by the asylums themselves. As soon as the proper commitment paper is made out the asylum may be telephoned to or telegraphed to, and male nurses are sent for male patients and female for female patients as necessary. Sometimes a physician also goes with the nurses. The State supplies a salaried dentist at every State hospital, also a salaried ophthalmologist, and there is a woman physician at each hospital. In all of the State hospitals which are accessible to large centers of population consulting staffs have been appointed, so that a great deal of excellent work is being done by surgeons in the cities, who operate on cases where operation is required, and by medical men and by specialists in various departments of medicine. Not only

do they do this, but they help to instruct the medical staff in the different departments of medicine. For instance, we have recently had appointed at the Central Islip State Hospital younger men from the city of New York as consulting physicians, surgeons, neurologists, etc. There are 3600 patients at this institution. These young consultants take the greatest interest in their new field, and are going to teach the hospital staff. We appoint young men for this purpose because they have the time, the enthusiasm, and the inclination to stimulate the medical internes of the hospitals.

All the State hospitals are now supplied with surgical operating-rooms, many of which are comparable in every respect to the surgical amphitheaters in any of our general hospitals in the cities. Large numbers of patients are placed on parole—that is, they are allowed the freedom of the grounds and of neighboring towns. When I went to the Poughkeepsie Hospital in 1884 there was not a patient on parole; in fact, few patients ever went outdoors at all. Some of the men went out for work and exercise, but none of the women ever went out of doors. Employment of patients has been diversified and so increased that the work on the grounds, in the gardens, quarries, roads, etc., has quite a considerable economic value in the State hospital system. It is needless to say that the moral treatment has been greatly improved during the twenty years. At the Poughkeepsie State Hospital in 1884 the wards were like barns; the walls were white and bare, the floors highly polished, but there was not a picture, flower, book, window shade or rug anywhere in the institution. Tables were screwed down to the floor, as were also the settees; patients were locked up in the sitting-rooms all day without anything to do and with nothing to look at. The only book that I found in that institution when I first went there for the use of the patients was a report of the Prison Association of the State of New York, and a young girl of sixteen was reading the records of criminals therein. In the way of moral treatment there has been such a vast transformation and improvement that the State hospital system is sometimes criticised. It is stated that these hospitals are elegant hotels, real Waldorf-Astorias, for the poor, which is at least a pleasant commentary on the present conditions as compared with the old, even if it is an exaggeration. They are well furnished and provided with everything to make them cheerful. The patients have liberties and all sorts of amusements, also religious services; they have a chaplain, both Protestant and Roman Catholic, and there is an actual fund, known as the amusement fund, set aside by the authorities for amusements of all kinds. Thus they may have theatrical entertainments, parties, baseball, tennis, concerts, musical instruments, etc. A good many thousand dollars are expended every year for the purpose of amusement and recreation. Nearly every institution now has a rather

complete hydrotherapeutic apparatus, and is well provided with all sorts of electrical instruments. I do not know that electricity is of any very great service in insanity, but there is no doubt that some cases are improved by it, and it has some stimulating effect—at any rate, of a suggestive nature.

The hospitals have ambulances to remove patients from one place to another, and they have invalid chairs, solaria, etc., for the sick. But best of all is the fact that the medical spirit of the hospital physicians has recently been awakened. You are familiar, most of you, with the establishment of a central pathological institute. Having fourteen State hospitals, it seemed advisable to the Commission in Lunacy and to my predecessor, Dr. MacDonald, instead of establishing a pathological institute or securing a pathologist at each of these fourteen hospitals, that it would be better to centralize the institute in New York city and there have most of this pathological work for the purposes of original research carried out, and to have all of the material sent thither from these hospitals. Dr. Van Gieson was made director of that institute. He conceived the idea of a collaborative laboratory with a number of different specialists in branches related to psychiatry to carry on original research. The scheme was, I think, an exceedingly good one, but, owing to differences which sprang up between the institute and the authorities, disorganization took place after several years of excellent work of a broad scientific nature. When I took the position of medical member of this commission Dr. Van Gieson had resigned, and it became necessary to reorganize the pathological institute, and it was reorganized on another basis. We secured Dr. Adolf Meyer as director, and he has appointed his assistants. We removed the laboratory from a building in Madison Square to Ward's Island, where the laboratory is now placed in immediate juxtaposition to 4000 insane patients, which affords a great supply of material for clinical research and scientific investigation.

The scheme of the laboratory is this: It is to do original work, but this is not to be its only aim and purpose. It is to stimulate and to educate in psychiatry the medical men on the staffs of these fourteen hospitals. This work is now being done. For instance, in December last the superintendents of all the State hospitals were brought to New York to take a course under Dr. Meyer in the latest principles of the specialty, and everything was brought before them that would help them to a complete understanding of the purpose of the institute and place them in a position to know how to direct the men under them to carry on the work subsequently. In January all the first assistants came to New York and took a similar course; in February the second assistants did the same; subsequently to that the third assistants had a course. Next Monday begins another course of instruction to other assistants. Hav-

ing stimulated them in this way, certain of the best men are to be selected by the State hospitals and sent down to Dr. Meyer's institute for a course of two or three months' study. In the meantime, work is going on under Dr. Meyer's direction along original lines. We have Dr. Lavene as physiological chemist, and we have a pathologist and histologist, and other departments are already or soon will be filled. In conducting this reorganization of the institute we thought it wise to appoint an advisory board of distinguished medical men to aid Dr. Meyer in carrying out the project. In this board are Dr. James Ewing of Cornell, Professor Cattell of Columbia, and Dr. Herter of the Bellevue and University Medical College. To represent the department of biology we have the director of the Museum of Natural History in New York, Mr. Bumpus; neurology and internal medicine are represented by Dr. Henry Hun of Albany, and, finally, the superintendents elect two of their number to act on this advisory board. These latter hold office for two years, so that each institution comes in turn to have a voice in the management of the central institute. This matter of doing scientific work in the State hospitals is a very important one, and ought to be dwelt on very strongly and urged forward wherever possible.

While general medicine has made such tremendous advances in twenty-five years, and we have been able by the discoveries of pathologists to save millions of lives, such progress has not been apparent in the domain of insanity, and I think for two reasons—(1) that we have to deal in insanity with the most delicate, complex, and inscrutable organs of the body, and (2) that the insane are always segregated in large public institutions or private institutions out of the reach of pathologists and others interested in purely scientific study. So it really becomes the duty of the State, and of private institutions that can afford it, to carry on this pathological, psychological, and chemical work, and some day, it may be many decades hence, problems will be unraveled which will mark progress in the domain of insanity as well as in the domain of internal medicine. We have practiced medicine for twenty centuries, and it is only within the last twenty-five or thirty years that any progress has been made, and yet it has been made as a result of all the previous work.

Now, these improvements that have taken place in the State hospitals of New York have all been carried on with a gradual diminution in the expense of maintenance, and that has been done because in purchasing large amounts of supplies, of course, you get them cheaper. The cost of maintenance has diminished to such an extent that all of these improvements have been made at a per capita cost of between $150 and $165. Part of this expense to the State is offset by moneys received from what we call reimbursing patients. We have about twelve agents in the State who travel about

and look into the financial condition of patients' families to determine whether they are able to pay $3 or $3.50 per week, which is the average cost of maintenance of each patient. These agents further investigate cases of alien insane, and we deport annually from 130 to 160 insane to other States and countries.

Now, as to the improvements contemplated: We do not feel that we have made any very great improvement in the past two or three years, and we still need to make progress in several directions. We wish to have the reception-hospital idea taken up. In the State of New York we still all too frequently receive our acute cases of insanity in jails and station-houses, but this is true all over the United States. There are no reception hospitals for the insane. Recently one has been established in Albany in connection with the Albany General Hospital, and that is doing extremely well. In New York city at the Bellevue Hospital we have the Bellevue pavilion, which has received the insane for the city of New York for a good many years. This was a result of natural evolution. There grew with time a demand for some place for the insane, and so they built this pavilion. The insane are received there for five days, and within that time committed to some hospital. They never were treated there until a year ago. Bellevue then came under the supervision of a board of trustees, which has redeemed the institution from politics, and there have been many reforms as a result. Three of our young assistants from the State hospitals for the insane have been put in charge of the pavilion, where they take histories of patients, treat them during their stay, and make out commitment papers to any of the institutions for which the patients are destined. We contemplate building in New York city a psychopathic hospital or reception hospital for 200 patients to receive just those cases. Bellevue only receives them for a few days in a very poor building, where they are simply placed for custody. It is not large enough; there are only thirty or forty beds in the building, and I found, in looking over a report of the Women's Prison Association in New York City, that 970 insane people were taken into station-houses in New York city in the past year, besides the 2500 insane people that came into Bellevue pavilion. So we contemplate building in New York for 200 patients and for 100 in Brooklyn, and ultimately expect to construct a true psychopathic hospital for some fifty curable cases at each of the great hospitals for the insane scattered about the State of New York. The trouble with so many of the present asylums is that they are built on monastery principles, and are not suitable places for the treatment of acute cases of insanity. They were not constructed with the general hospital idea.

The number of insane is increasing so rapidly in the State of New York that we are obliged every few years to construct new buildings, and now we are obliged to establish a new State hospital.

We increase the number of insane of the State by about 600 or 700 per year. Present hospitals are now enormously overcrowded; hence it is proposed to build a new one in the Champlain region, where it will be convenient to the great centers of population about Albany and Troy. Patients from Troy and Albany must be taken to Utica or Poughkeepsie. Our guiding idea is to have reception hospitals in all the large cities of the State, and then to construct all new asylums in the country districts on the colony plan. The colony plan we consider to be the ideal standard for any State institution established in the country districts. But these colonies in the country are not to be wholly for the chronic insane, but for mixed classes of insane. They will receive acute cases also. Examine any asylum about your own town which may have been established as an institution for chronic insane, and I am sure that you will find there acute cases. An asylum wherever established will inevitably attract to it from every direction all kinds of cases of insanity—acute and chronic, curable and incurable. I was interested in looking over the tables of one of your own institutions for the chronic insane near Baltimore. I saw that there were some thirty or forty cases of acute insanity in that institution. The arguments in favor of the colony system are these: The original cost is less than the cost for these enormous buildings, with underground corridors and costly systems of heating, ventilating, etc.; the annual cost for repairs is less, and one can increase the capacity of the colony without destroying the original plan. Look at any State hospital planned twenty or thirty years ago, and you find the whole plan has been distorted. The architect's original conception has been destroyed altogether. But in the colony system you may build a small building for twenty or thirty patients whenever you please, and go on increasing indefinitely. The sanitary conditions are always better in scattered groups of buildings. The cost of maintenance is said to be less in the colony from studies made on this subject in Germany. But, to my mind, the most important argument is the welfare of the patients. The home idea is at the basis of the colony system, where you have a village or farming-hamlet sort of life, and this is an immense improvement on the vast corridors and wards to which acute cases are taken, as a rule, in our monastery type of buildings. To my eye, the Craig colony as it now exists is exactly suited to the needs of an insane asylum. Here there is an administration building, a hospital, an infirmary for men, an infirmary for women, and all the rest of the patients are in little colonies of separate cottages.

We hope before long to have convalescent homes in certain parts of New York for the poor patients who, when they are well enough to go from the asylums, are not well enough to go to their homes. These convalescent homes should be such that we can send the pa-

tients to them for periods of weeks or months as may be required. It is expected that such homes will be founded by private charity in the not distant future.

We have been separating the tuberculous cases in our State hospitals either in district wards with solaria or, as in several instances, in tents. At Ward's Island a great many tuberculous insane have spent two winters and summers in tents.. They have done extremely well, but we are going to build this year tuberculosis pavilions at three of the institutions to supplement the tent treatment —one at Utica on a farm two miles from town, one at Middletown, and one at Binghamton, in connection with the State hospitals situated at these centers. We are also building an isolation-house at each of the State hospitals for cases of communicable disease, for we have had at times outbreaks of smallpox, typhoid fever, diphtheria, etc., in various institutions.

In order to make the far from pleasant lives of the attendants upon the insane more agreeable, we have been building, and are still building, nurses' homes at all of the institutions, so that the nurses will get out of the wards and into comfortable quarters by themselves.

We are planning to improve the methods of commitment in New York. At present we have a system like this: Any patient to get into the State hospital must have the paper made out and signed by a petitioner (generally a relative of the patient) and by two physicians, and then, after being sworn to, it must be approved by a judge of a court of record before the patient can be admitted to any State or private hospital. We have a bill before the legislature at the present time for emergency cases, providing that if the paper is signed by two physicians the patient may be taken without the approval of the judge for five days.

We have thrown open the hospitals to clinical assistants—that is, we want to take young men who have just graduated as clinical assistants, giving them board and lodging and letting them enter the State hospitals, just as they enter general hospitals, to obtain what they can out of the laboratories and to work on the material collected there. There is an immense amount of material, and we think the opportunity is a good one for young men who cannot get into general hospitals to come to us for the study of general as well as special medicine. We hope to benefit ourselves also in taking this step by improving the character of the staffs. Many of these young men are already staying on and obtaining salaried positions after civil-service examinations.

I did not know anything of the conditions in Maryland until I glanced over today the report of your Lunacy Commission, which your secretary put into my hands, and I was very much pleased to see that in everything pertaining to the progress and care of the in-

sane the Lunacy Commission of Maryland is in the lead. In the matter of State care, in the matter of care of the epileptic, inebriate, criminal insane, etc., your commission points the way, and it seems to me that if the people of the State could be awakened to the needs of these reforms you would be able to make the progress you desire. The main thing is that you have the apathy, the lethargy, the inertia of the public to overcome, and that can only be accomplished by constantly referring to the shocking things that occur here in the State at the present time. I say shocking things, because New York has been so long awakened to the enormity of such offenses as these that it would strike a note of horror throughout the whole State of New York to read, as I read here, that there is one place in the State of Maryland where five men and two women (all insane) live and sleep in one room fifteen feet square.

A NEW TREATMENT FOR WRY-NECK.

By Leonard K. Hirshberg, M.D.,
Baltimore.

Although the subject of torticollis is a hackneyed one, anything which may tend to throw light upon its pathology or therapeutics is always appropriate. The pathology of torticollis, as far as our present knowledge goes, rests entirely upon negation and probability. The central and peripheral parts of the nervous system show no unusual change. The probability is in most cases that the kinesthetic centers for the sternocleidomastoid, splenius, trapezius, scaleni and deep cervical muscles are the points of origin for the various spasms. Another way to express our ignorance is to say that torticollis is due to irritation of the nuclei of the neurones.

Spasms of the neck muscles may be restricted to a few or many muscles. The sternocleidomastoid may be alone affected or in association with the trapezius. The splenius may be attacked on the opposite or the same side, and the scaleni or deep cervical muscles may be involved. Every possible combination with the platysma and the omohyoid now and then occurs.

Individuals with neuropathic relatives or ancestry are more subject to torticollis than the average person. Congenital and rheumatic wry-neck are not included in the present survey.

In looking through the literature, and carefully inquiring of my own patients, I can find a history of injury as the cause of the disease in only a few instances. Reflex causes play a part, such as suppurative middle-ear disease. Tumors of the medulla may cause it.

In the three cases here reported the only etiological factors which

could have played a part were exposure in one, alcolholism in the second, and diabetes in the third.

Case A. B. L., aged forty, Hebrew, male, came to my office December 8, 1902, complaining of wry-neck. Father died of old age; mother died during menopause. Three brothers living; all have rheumatism. He has had pneumonia, pleurisy, and measles. No rheumatism, no venereal diseases.

Present illness began four years ago. Woke up one morning with it; thought he had caught cold in a sleeping car. Head was drawn towards left shoulder. Noticed a clonic spasm which occurred in the muscles affected by the tonic spasm. Had one remission of spasm two and a-half years previously. There never was any other remission. Averaged about twenty-five spasms each minute. General condition very good; secretions all healthy.

There was a steady, persistent tonic contraction of the sternocleidomastoid of the left side. The face directed towards the right and the chin elevated. No diseased vertebrae; no pharyngeal abscess; no fibroid change in the muscle. The upper part of the trapezius was involved. Whenever the arm was extended a quick spasm occurred. Pupil reacts to light and accommodation. There was no nystagmus or strabismus. There were no enlarged glands, no hypertrophies, no atrophies. Tongue clean; no tremor, in midline. There was no tenderness or sensitiveness to pressure. Chest, abdomen, and secretions negative.

This patient was treated by the Faradic current daily for five minutes over a period of four months. The method of application is to place the positive electrode over the wrist and apply a roller (negative) electrode over the *healthy* sternocleidomastoid and upper fasciculus of the trapezius on the *unaffected* side.

An internal treatment of two drops of liquor potassae arsenitis was continued three times a day throughout the four months. Almost from the beginning there was a marked improvement. At the end of the treatment the patient's head was perfctly erect, and a scarcely perceptible stiffness of the muscles still remains. The cosmetic result is excellent, and although the arsenic has been stopped for some time, there has been no return of the clonic spasms, September 15, 1903.

Case B. C. P. came to the outdoor department of the College of Physicians and Surgeons on April 12. Colored, male, aged thirty-eight, laborer, married. Complained of stiff neck. Father died of kidney disease; mother living and well. Patient had gonorrhea, typhoid, and "kidney" trouble. Present illness began one year ago. Fell asleep sitting with his head on his arms, and noticed a stiffness in neck on left side next day. Grew steadily worse. Doctor told him it was rheumatism. Did not improve. Has been treated with electricity, massaged, etc. Medicines have been taken internally

and rubbed on the surface of the body without avail. Eyesight has been growing bad and he suffers with headache. Appetite good. Bowels regular. Rises frequently at night to micturate. Has no pain, numbness or weakness. Ankles seem swollen at times. He has no jerks, but head is always drawn towards the side.

The trapezius, splenius, and sternocleidomastoid of the left group are contracted. No rotary contractions are present. No fibrillary tremors. Muscles on the right side apparently (relatively?) atrophied. Head is drawn backward and to the left. Pupils active to light and accommodation. No strabismus, diplopia or nystagmus. No tremor of tongue. Reflex of facial on left active; absent on right. McCarthy's reflex present on left; absent on right. No ataxia of upper extremities. Supinator and triceps reflexes absent on both sides. No weakness of extensor or flexor muscles. Heart clear and not enlarged. Small area of dullness and lengthened expiration beneath left clavicle. Abdominal and cremaster reflexes present. Patella reflex on left decreased; absent on right. No ataxia of lower extremities. Achilles tendon-jerk absent. Urine contains much sugar with restricted diet.

The treatment consisted of a rigid diet and the application of the Faradic current for five minutes daily upon the sternomastoid, trapezius, and splenius of the well side. He improved steadily for two months, when he ceased treatment.

Case C. F. M. P., white, male, single, aged forty-five, Russian tailor. Mother living; an invalid. Father died of old age. One brother died of tuberculosis. Two brothers living and well. Patient had diphtheria and measles. No venereal disease. Heavy drinker. No rheumatism in family.

Present illness began last week after excessive drinking. Came on gradually. Seems worse today than ever. Has been taking medicine, with no success. Head feels as if held in a vice, but has no pain anywhere. His head jerks very often. Appetite good. Bowels and urine regular. Never had joint or muscle pains of any kind. Never vomits and is never giddy.

His sternomastoid is contracted firmly on the right side. Trapezius and other muscles uninvolved. Pupil on right slightly more dilated than on the left; react actively. Reflexes present. Tongue not diverted. No tremor. No glandular enlargement. No points of tenderness anywhere. Heart and lungs negative. Reflexes present in both upper extremities. No ataxia, no tremor, no weakness. No disturbance of sensation. Patella reflexes present. Achilles tendon jerk present. No ankle clonus; no swaying with eyes closed and feet together. Babinsky reflex absent. No nodules or swellings in the joints. Nothing unusual in gait. Urine contained no albumen or sugar.

The treatment was the same as Case A, and at the end of three weeks the patient discharged himself as cured. Of course, there is no positive way of excluding rheumatic torticollis from the last case, but there is nothing to indicate such an etiology in the history

MARYLAND'S NEED OF A MOUNTAIN SANATORIUM FOR INDIGENT CONSUMPTIVES.*

By Henry Barton Jacobs, M.D.,
Associate in Medicine, Johns Hopkins University.

READ AT THE ANNUAL MEETING OF THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND. APRIL, 1903.

THE tuberculosis problem, I conceive, must be attacked in three directions:

1. In the prevention of the spread of the contagion. This is largely the work of the sanitarian, and consists of an educational crusade to improve the hygiene and the habits of the people.

2. In the cure of those already afflicted. This becomes the work of the physician.

3. In caring for, properly housing, and generally relieving those who must die. Here is work for the philanthropist.

But for all three—sanitarian, physician, and philanthropist—to accomplish the most good they should belong to a profession possessing theoretical and practical medical knowledge. So it is, in the first place, that upon the shoulders of our doctors rests the duty of carrying forward the threefold fight. *We* must be the leaders, but we must have in our ranks those who can give freely not of their lives, but of their money.

The question of the prevention of consumption will be discussed later. This morning what I propose to call to your attention is its methods of cure, and whether in our struggle for this we can profitably make use of a mountain sanatorium.

It may be taken for granted without further discussion, for it is now the universally-accepted opinion of all honest students of consumption, that the features most likely to restore one afflicted with tuberculosis are continuous life in the open air and abundance of good food. These ideas are by no means modern ones. In this country Benjamin Rush, more than 100 years ago, called attention to the fact that the Indians and the first settlers, those who lived a complete outdoor life, were rarely, if ever, affected by the disease, but in the renaissance of medicine in the past twenty-five years greater stress has been put upon these features, and the profession as a whole has come more generally to accept them than ever before. Dr. Trudeau more, perhaps, than anyone else in this country, has

*I wish to preface my remarks by saying that I use the word "indigent" in no sense as synonomous with pauper, but only as defining those whose means are so limited that they could not well undertake the expense of travel to and treatment in the distant and more or less expensive resorts of consumptives outside our own State.

given impetus to this move. His classical experiment, illustrating the strikingly different mortality rates of rabbits inoculated with tuberculosis when they were allowed to run in the open air, or when shut up in dark, damp, confined pens, has offered such proof of the truth of this proposition that it may be considered a mathematical demonstration.

If, then, we might be able to say to all those early afflicted with consumption, "Take a home in the country, spend all your time out of doors, eat plenty of the most nourishing food, sleep as far as possible in the open air, or, what is practically equivalent, with all the windows open, be absolutely careful of your sputum, so that in no possible way can any member of your family or those in the neighborhood become infected"—if we might say this, then there would be little difficulty in treating the subject. Unfortunately, however, are we seldom able to say these things to our patients.

Consumption is not primarily a disease of the well-to-do who live in large houses, with clean, healthful surroundings, plenty of sunshine and some leisure for recreation, but it is in large part the disease of the poor, living in narrow streets, in small dark rooms, who work all day in ill-ventilated shops or factories, who have little or no time for diverting and regenerative recreation, whose naturally frail constitutions are no way fitted for the battle of existence in the hard unsanitary surroundings in which they are cast. What good will it do to advise these people to go into the country and live in the open air? They have no means whatever for carrying out such directions.

Just here comes in the generosity of States, municipalities and individuals, and proclaims: "We recognize in our midst a number of individuals afflicted with a disease, curable if taken in time, and only needing to be provided with a home in the country where they may go and regain their health instead of becoming a burden and a danger to their friends and the community, and sooner or later succumbing to the ailment, and we declare we will provide this home. We take care of our paupers, no matter what sins of commission and omission they may have committed to bring them to their state of want; we take care of our dependent insane; we provide general hospitals for the treatment of all manner of surgical and medical diseases, and so we feel bound to take care of this large class of indigent consumptives, that they may have every opportunity of recovering, or that they may be made comfortable in their last sickness and removed from the danger of communicating their disease to others." This is just what a number of our sister States and communities have said, and this is what I would endeavor that the State of Maryland and the philanthropic communities of her citizens should say to the afflicted in their midst.

Will a mountain sanatorium aid in restoring our consumptive sick to health, and will it do anything else?

When I say mountain sanatorium I use the term to indicate a sanatorium established in as favorable a locality as possible for the work it has to do. We need not go but a few miles into the country to get away from the smoke, dirt and dust of the city, and find a pure, healthful air, but there are other considerations:

1. The character of the soil, whether damp or dry. The influence of this Dr. H. I. Bowditch long ago pointed out in his studies upon the effects of soil moisture in the production of consumption.
2. The daily average amount of moisture in the air.
3. The average temperature throughout the year.

It seems to be pretty well established that in the neighborhood of Baltimore at least our consumptive patients are rather badly affected by the extreme heat of summer. In the hospital at Towson we have come to this conclusion. So that in order to find the most favorable environment for a sanatorium in our State it seems best to go away from the immediate vicinity of Chesapeake bay to some locality where the soil would be dry and well drained, where the damp days and nights might not be so frequent, and where the heat of the summer might be mitigated by some degree of altitude. On the other hand, the site selected should not be so far removed from the city which will supply the greatest number of cases, that the journey thither is exhausting and too long for the occasional visits of friends and family, which contribute so largely to the production of content and happiness and hopefulness of the patient. Nor, again, should such a sanatorium be placed in the immediate vicinity of any summer settlement to the possible injury of property there, but should be so far removed from it that while in no way an annoyance, it is, on the contrary, a source of interest to the summer colony, one appealing to their philanthropic and generous instincts. The Saranac Sanatorium has been very largely aided by the summer visitors to the Adirondacks, who have taken a personal interest in its work and have contributed largely to its support.

To return to my question: "Will a mountain sanatorium aid in restoring our sick, and will it do anything else?"

I can only answer this by referring briefly to the work in an institution after which we might pattern ours, as it represents a type of similar institutions the world over. The report for 1902 of the Massachusetts State Sanatorium at Rutland has just come to me, and I will recall some of its statistics. You are to remember this institution is in the center of Massachusetts, sixty miles from Boston, on a hill or mountain 1200 feet above sea level—almost exactly the counterpart of what can be found in Maryland in either Frederick or Washington counties.

Let us see what these statistics show. In the year ending Sep-

tember 30, 1902, there were admitted 324 cases. In 156 of these cases, or 43 per cent., the disease was arrested or apparently cured, and 140 cases, or 40 per cent., more were improved, making a total of 83 per cent. of all cases either practically well or improved.

Now, of these 324 cases, 165 were considered advanced or moderately advanced when admitted, and, therefore, such that there was less likelihood that the sanatorium treatment would prove useful. However, of these 165 cases, in 42 cases the disease was arrested or apparently cured, and 100 more cases showed improvement, while but 20 showed no improvement.

Turning now to the cases which were in the incipiency of the disease when first admitted, for whom the sanatorium was especially planned and for whom there was the greatest hope of improvement from the open-air life, we find there were admitted of this class during the year 159 cases. Of these, 114 cases, or 71 per cent., were sent home with disease arrested or apparently cured, while 40 more cases, or 25 per cent., showed their condition to be improved or very greatly improved—that is, of these 159 incipient cases, 96 per cent. were returned to their homes either practically well or improved, and only 5 cases showed no benefit from their sojourn in the sanatorium.

Think of it! Of those with consumption who presented themselves for treatment at the Massachusetts State Sanatorium in the very beginning of their disease, 71 per cent. went back with disease arrested or apparently cured, and 25 per cent. with condition improved; 96 per cent. of all cases received decided benefit. Nor does this by any means represent all the good accomplished, for every one of the whole 324 cases represented a dangerous focus of infection removed for the time of their stay in the sanatorium from the family and community in which they lived; and more than that even—their stay in the institution was such an object-lesson in personal hygiene and in the manner of life necessary not only to the cure of consumption, but of how to avoid it, that each one of these cases must have become, to a greater or lesser extent, according to the intelligence and the enthusiasm of the individual, a missionary for good in the neighborhood to which he returned.

Of the whole 324 cases but three died. So we may sum up the year's work at the Massachusetts State Sanatorium in this way: One hundred and fifty-six cases of consumption were arrested or apparently cured, 140 more cases were improved, while 321 cases were taught proper methods of life likely to lead to health or the avoidance of the disease, and these 321 people were sent back home as active missionaries to preach and to work for those things favorable to the suppression of the spread of consumption.

I feel that I have answered conclusively my question, "Will a mountain sanatorium aid in restoring our sick of consumption, and

will it do anything else?" If it will do such things as I have just spoken of, or but do them in part, then there is surely need for its existence.

But no public institution dependent upon the public for support can be assured a successful life until the people are convinced of its usefulness. In the question before us the people of Maryland look to the physicians of the State for an answer. If we, as a united profession, feel the need of a mountain sanatorium, and but exert our influence to show its usefulness and necessity, there can be no doubt that a subject so close to the people's welfare will receive the people's support. It rests wholly with us to make this necessity felt.

In order to determine to some extent the mind of the medical profession of Maryland upon the subject, and to discover, if possible, whether there were patients in the State which might be considered suitable for such an institution, I wrote letters or sent postal cards to 450 physicians scattered throughout the State and the city. The names of these physicians were selected almost at random, but with these ends in view:

1. That at least one letter should go to nearly every town of the State in which there were two or more physicians in practice.

2. That to the larger towns where there were over five practitioners at least two letters should be addressed.

3. That in nearly every case the physician selected should be one graduating from a well-recognized medical school, and preferably one who had been in practice at least five years, and not over twenty-five years, by these limits hoping, perhaps, to avoid youthful enthusiasm for new things, on the one hand, while escaping the satisfied complacency in things as they are, on the other.

In the city of Baltimore the town was pretty generally covered, especial effort being made that physicians living in the more likely tuberculous neighborhoods should be reached.

This is the tenor of the letter sent:

"Baltimore, April 14, 1903.

"My Dear Doctor—At the coming meeting of the State Faculty I am to make some remarks on Maryland's need of a mountain sanatorium for her indigent consumptives who stand a fair chance of recovery.

"I wish you would tell me whether you have in your practice patients whom you would think wise to send to such a sanatorium if one were established. I am writing to about 450 of the leading practitioners of the city and State, and am hoping that each one will be good enough to reply promptly to my inquiry.

"Thanking you in advance for your kindness,

"Very truly yours, HENRY BARTON JACOBS."

To all those physicians, whether in country or city, who were

good enough to reply I wish here to extend my sincere thanks not only for the information given, but for their encouragement and aid in my work, and I herewith most earnestly exhort them not to let the matter rest until what we so sadly need shall have been obtained.

Of the 450 letters or cards sent out, replies were returned to 231 —just over 50 per cent.—and of these replies, 209 were enthusiastic in their statement of the need of a mountain sanatorium, 19 made no mention whether they were advocates of it or not, while only 3 showed by their replies that they were not favorably inclined to the erection of such an institution. From these figures I think it may be taken for granted that a great majority of the physicians of the State are convinced of the usefulness of the sanatorium treatment of early cases of consumption, and feel the pressing need in their practice of an institution to which they might send their early indigent cases with a well-grounded hope and expectation that they would receive such benefit as would justify the institution's existence and proper maintenance.

I wish I might read you these replies, some from the utmost corners of the State. They show an enthusiasm and an earnestness in the cause which is most hopeful.

Of those replying, 143 state that they have one or more patients at present whom they think suitable cases for treatment in a mountain sanatorium. The majority say they have "several." One man has ten. I think it fair to say that these 143 replies carry an average of three cases. So that if a sanatorium were established tomorrow these 143 practitioners could gladly supply perhaps 429 patients.

I am sorry I have not had time to analyze more completely the interesting information received, but it all points one way: we need a consumptive sanatorium, and we need it very much. The question is how to get it.

The little hospital at Towson has been doing excellent service, and it is remarkable how much improvement the hopeful cases derive from a stay of three or more months there; but more beds are needed; the hospital must be extended to meet the growing demand for accommodation. So a very generous individual of this community has offered $25,000, provided a similar sum is raised, that this extension may be made in some suitable locality in the Blue Ridge mountains, and in this offer lies our hope of a beginning mountain sanatorium. For this hope to be realized it requires the persistent and very active encouragement of all members of our profession. If we but give it our earnest support and try to assist it by our influence both in our communities and in our legislature, we shall be able to convince our citizens and our State that Maryland must not fall behind her progressive neighbors, but must come to see the need of a mountain sanatorium for indigent consumptives, and must provide it.

Current Literature.

REVIEW IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

THE USE OF ADRENALIN.

Gottschalk (*La Presse Médicale,* June 3, 1903) contributes an article of interest on the use of adrenalin in which the subject of the physiological attributes of the drug and its therapeutic uses are reviewed. The drug is coming so much more into daily use by both general practitioners and specialists that we think it will be of interest to call attention in full to Gottschalk's article, which offers no new investigations of his own, but gives in convenient form all the important points in the physiology and pharmacology of this drug. From the discovery of Addison that the disease now associated with his name was due to certain pathological changes in the adrenal or suprarenal glands many physiologists have studied the effect of administering the gland either in the natural form or dried or in the form of a watery extract. The results obtained were variable, as would be expected by the variations in the preparations employed, but, speaking generally, their conclusions were about as follows: The suprarenal extract, first, slows the pulse by stimulation of the pneumogastric nerve, according to Schäfer, Oliver, and Cushny; second, it reinforces the cardiac systole by direct stimulation of the cardiac muscle, according to Schäfer and Cushny; by stimulation of the cardiac ganglia, according to Gottlieb and Radziejewsky; third, it increases the blood-pressure, causing the smaller vessels to contract, by peripheral action upon the vaso-motor nerves, according to Schäfer; by peripheral action upon the muscular fibers of the capillaries, according to Cushny and Shoemaker; by central action upon the vaso-motor nerves, according to Cybulski, Szymonovicz, and Von Scyon; fourth, it brings about marked blanching and ischemia of all the tissues—skin, mucous, and serous membranes.

The instability and impurity of the drug used in the early experiments prevented its being used to any extent as a therapeutic agent, and many physiologists therefore devoted their attention to the preparation of a more definite and more stable product. The first to obtain definite results was Abel with his epinephrin, but two years later Von Fürth demonstrated that this was only an impure mixture, and he produced a substance—suprarenin—which he believed to be the active principle. The definite product was isolated

by Takamine, who gave it the name adrenalin. This is a white crystalline powder, slightly bitter to the taste, very slightly soluble in cold water, more soluble in warm water or in solutions of sodium chloride, but insoluble in alcohol or ether. It possesses a feeble, alkaline reaction, and its formula, according to Takamine, is $C_{10}H_{15}NO_3$. It is a powerful reducing agent, and for this reason may be used in photography. It is not an alkaloid in the proper sense of the word. Its physiological activity is astonishing, as it is the most powerful styptic known, while the administration of the drug intravenously, hypodermically or by mouth has a powerful effect upon the heart and vascular system, producing an enormous increase of blood-pressure, besides having a powerful effect upon the muscular system in general. Thus adrenalin has practically the same effect as the adrenal gland itself, except that it is more powerful, it is definite, and therefore its dosage can be determined, and it may be sterilized. According to Gottschalk, it is neither irritating nor toxic, nor does it accumulate in the organism. Many investigators, however, differ with this last view, for Lépine has shown that an intravenous injection of 2 milligrammes of the drug per kilogramme of animal brings about death by syncopy. Also Amberg in this connection reaches the following conclusion: In a strong dosage, that is, 2 milligrammes intravenously or 6 milligrammes subcutaneously per kilogramme of animal, vomiting takes place, and after a short period of excitement a condition of weakness, with bloody diarrhea, sets in, followed by intense prostration and subsequent death. In acute poisoning by the drug death is due, perhaps, to paralysis of respiration, perhaps of the heart. According to Chevalier (*La Presse Médicale,* May 30, 1903), who used rabbits instead of dogs in his experiments, toxic symptoms make their appearance with doses of from 1 to 1½ milligrammes per kilogramme of animal. The toxic phenomena consisted of dyspnea, prostration, and paralysis, while the convulsive phenomena, which appear just before death, are probably due to the accumulation of carbonic-acid gas in the organism.

Gottschalk next discusses the therapeutic application of adrenalin. In Addison's disease it is the drug *par excellence,* although most of the cases benefited by adrenal extract have been treated by the simple extract of the gland, and not by adrenalin. In diseases of the heart its action is powerful, and manifests itself within a few moments. According to Floerschein, who observed its effect in 200 cases, by the administration of the drug the heart-beats are strengthened and made more regular, the dilated heart is distinctly contracted, the too rapid pulse is slowed, and in come cases where the pulse is already too slow the administration of the drug causes an augmentation of the pulse. In chloroform syncope the results

of animal experiments seem to show that the intravenous injection of adrenalin is the proper treatment in severe cases, while Reichert has had excellent results with this drug in cases of poisoning with opium or morphia. In oto-rhino-laryngology the use of the drug is so well known, especially in the surgical treatment of diseases of the ear, nose, and throat, that it is hardly necessary to again call attention to it. Rode advises a mixture of cocaine and adrenalin, 5 parts of the former, 95 parts of the 1 to 1000 solution of the latter, in operations on the nose and throat, while Rosenberg first applies the adrenalin, then the cocaine, believing that by this method the toxic effects of the latter are minimized. In treatments of diseases of the eye adrenalin is useful, as it does not harm the corneal epithelium, nor does it affect the condition of the pupil nor the accommodating power. According to Vignes it does not affect the tension of the healthy eye. It is useful in the treatment of conjunctivitis and in conjunction with various myotics in the treatment of glaucoma.

Frisch uses adrenalin to avoid hemorrhages in the cystoscopy of irritable and inflamed bladders, administering from 100 to 150 c. cm. of the 1 to 10,000 solution three to four minutes before the examination. The drug is also useful in the removal of vesical neoplasms by the suprapubic incision, and is of use in hypertrophy of the prostate, 2 cc. of the 1 to 1000 solution injected into the urethra being of great aid. Among other uses to which the drug has been applied may be mentioned hemoptysis, in which the drug can either be applied locally or by mouth or by hypodermic injection, Souques and Morel giving one-half a milligramme by the last method. Le Noir has obtained good results by intratracheal injections, and Vaques by intrapulmonary injections.

In gynecology the drug has been employed in metrorragia due to various causes—myoma, cancer, etc. It has been used also to stop hemorrhage after curettage, in the treatment of hemorrhoids, in hematemesis, and in various conditions met with by the dentist, while it has been recently proposed that it should be used in the treatment of rickets, exophthalmic goitre, hemophilia, albuminuria, diabetes, purpura, dermatitis, herpetiformis, lupus, and at the time of the appearance of the menopause. Recently Mahu has called attention to the results obtained by him with this drug in the treatment of certain forms of epithelioma.

Gottschalk believes that the drug will be used more and more as its properties become better known, and he believes that the discovery of the active principle of the adrenal gland marks an important date in the history of biological chemistry.

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SUBCUTANEOUS INJECTIONS OF GELATINE IN THE TREATMENT OF HEMORRHAGE.

Labbé and Froin (*La Presse Médicale*, May 20, 1903) discuss the use of injections of artificial serum to which gelatine has been added

in the treatment of hemorrhages of various kinds. This article and the observations upon which it is based is due to the criticisms of this method and its dangers, which have recently been discussed by Chauffard, Dieulafoy, and Hayem, all of whom disapprove of the method most highly.

Dastre and Floresco first showed the coagulating qualities of gelatine and attempted to utilize this substance in the treatment of hemorrhages, not only in the form of local applications, but also by subcutaneous injections, believing that thereby the coagulability of the blood would be increased, and thus visceral hemorrhages stopped. From 1896 Carnot has used subcutaneous injections of artificial gelatinized serum, giving 20 to 100 cc. of this daily. The serum contained from 1 to 5 per cent. of gelatine. He used this in the treatment of hemophilia, hemoptosis, metrorragia, etc. Lancereaux and Paulesco have used it in the treatment of aneurism, and since that time a large number of authors have used this method and have published many favorable reports of its success in various cases. In fact, Labbé and Froin themselves had obtained a number of results in certain cases of hemorrhage from the bowel in typhoid and hemoptosis in tuberculosis, but their recent unsuccessful results have made them far less favorably disposed towards this method of treatment. As they well say, nothing is more difficult to appreciate than the therapeutic results in the case of hemorrhage. In the first place, every hemorrhage tends to arrest itself spontaneously, while, in the second place, it seems to be the lot of every new drug to call forth only favorable communications on the part of the first doctors who use it. Thus the only fair method of testing the value of gelatinized serum in the treatment of hemorrhage is to test the coagulability of the blood before and after its administration, and not to depend entirely upon clinical phenomena. The method employed by Labbé and Froin was the method of Milian, which consists in placing three drops of blood upon three clean glass slides and noting the time which it takes for each drop to coagulate, this being tested by inclining the glass slides from time to time and noting whether the blood is still fluid. Their observations were made on a number of cases, and in each case many observations were made, the coagulability of the blood being tested several times before and after each injection. These cases included one case of purpura, one case of tuberculous hematuria, one case of severe jaundice, one case of hemorrhage from the bowel in typhoid, and one case of aortic aneurism. In these cases the 1 per cent. gelatinized serum was injected, usually 50 cc. at a time, and from five to twenty injections were given in each case. The authors also performed experiments, five in number, upon rabbits, using in this case 2 per cent. gelatinized serum.

All these observations, both in human beings and in animals, had

the same results, and in no case was the coagulability of the blood increased. In the case of purpura the administrations of injections did not prevent three recurrences of the condition. In the case of the patient with hematuria the condition persisted ten days, in spite of the injections, while in cases of typhoid hemorrhage injection of the serum did not prevent a recurrence of the condition, from which the patient died. The effect upon the coagulability of the blood was also *nil,* and even in those cases where, before the injections, coagulation was slowed, requiring fifteen to thirty minutes instead of the normal ten minutes, the gelatine injections had absolutely no effect, and this was the case whether the blood was tested immediately after the injection or at various times during the following twenty-four hours. All variations from these results fall within the limit of error. The animal experiments were no more conclusive than the results in human beings. In three cases the injections seem to have slightly increased the coagulability, in two cases retarded it.

According to La Borde, gelatine is not able to be absorbed in the cellular tissues, while Gley and Camus have shown that gelatine injected into the peritoneal cavity of animals is found there unchanged sometime afterwards. In conclusion, Labbé and Froin state that "the action of injection of gelatinized serum upon the coagulation of the blood is *nil.* If one remembers that the injections are absorbed slowly, are painful, and in some cases have been followed by tetanus, one may feel convinced that they merit being rejected in the treatment of hemorrhage."

* * *

CYANOSIS AND POLYCYTHEMIA.

The connection between cyanosis and polycythemia is an interesting one, and one which has recently received considerable attention, notably by Osler, who, in a recent paper read before the Association of American Physicians, described a number of cases of cyanosis and polycythemia, which, as there were no underlying explanatory causes, he regarded as a distinct clinical entity.

Gibson (*Lancet,* January 17, 1903) believes that in all cases of cyanosis, whether due to disturbances in the respiratory or the circulatory apparatus, there is present a high specific gravity of the blood, often associated with a hemoglobin percentage of over 100, and practically always with an increased number of leucocytes and red-blood corpuscles, of the latter there being frequently present over 7,500,000 to the cubic millimeter. According to Gibson, the reason of this increase is that in conditions of venous stasis the red-blood corpuscles carry less oxygen than under normal conditions, and thus their length of life is longer. He bases this view on the fact that in two cases in which both the arterial and the venous blood were examined the increase was present in both cases. According to Gibson, the use of oxygen inhalations is absolutely ineffective in these conditions.

PATHOLOGY AND BACTERIOLOGY.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

Cyto-Diagnosis in Meningitis. T. Guida. *Arch. di Patholog. Clin. Infant., Arch. of Pediatrics,* July, 1903.

No leucocytes are found in the normal cerebro-spinal fluid of man, but in very rare instances a small number of white cells may be met with in this liquid, as has been demonstrated by Widal. On the other hand, in meningitis and pseudo-meningitis this fluid contains mononuclear and polynuclear leucocytes and endothelial cells in such numbers as to assist in the diagnosis of these conditions.

Widal, Sicard, and Revaut conclude from a study of this question that in acute meningitis the cerebro-spinal fluid contains morphological elements of fairly constant characters, and that the lymphocytes predominate almost exclusively in tuberculous meningitis. This they considered as a diagnostic sign of tuberculous inflammation of the meninges, thus adding a new mode of differentiating the cerebro-spinal from the tuberculous forms of the disease to our resources of diagnosis. In cerebro-spinal meningitis the characteristic cells found in the fluid are the polynuclear, which predominate over all other forms. The present author calls attention to the fallacies of these methods of diagnosis in meningitis. Lymphocytosis in the cerebral fluid is not absolutely charactertistic of tuberculous cases, as it may occur in chronic cases of cerebro-spinal meningitis, while a pure lymphocytosis, or even a predominance of lymphocytes, may be absent in tuberculous cases. In cerebro-spinal meningitis the polynuclear leucocytosis is not pure, except in the first stages of the disease, and later the mononuclear cells are met with in the same proportion as the polynuclear, until finally the polynuclears diminish and disappear entirely, leaving only the lymphocytes. While errors are very apt to be made with this method of diagnosis, yet the cytological study of these exudates in meningitis may be of considerable prognostic importance. The gravity and subsequent course of a meningitis may, in other words, be deduced from a quantitative study of the various leucocytic forms. In pseudo-meningitis, *i. e.*, in the presence of meningeal symptoms in cases of gastro-intestinal and other diseases not affecting the meninges, cyto-diagnosis can have no serious value. In typhoid fever, however, according to Grenet, the absence of leucocytes in the cerebro-spinal fluid would show that the nervous symptoms are functional, and not due to a meningitis. On the other hand, a lymphocytosis would speak for a transient meningeal inflammation, yet we should be careful how we trust the findings of cyto-diagnosis in typhoid fever, for the cases observed are still few.

and it is important to give weight to the clinical manifestations of the case in each instance.

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A Statistical Study of the Intestinal Parasites of 500 White Male Patients at the United States Government Hospital for the Insane. Garrison, Ransom, and Stevenson. *Public Health and Marine Hospital Bulletin,* May, 1903.

This examination was undertaken to determine the percentage of infections with animal parasites and of demonstrating the value of microscopical examination of the feces in general clinical diagnosis. In general, the cases of infection were not severe. The average age of the men in whom the parasites were found was 37.75 years; of the uninfected cases, 47.9 years. The rate of infection decreases as the age of the patient increases.

The results of the investigations are given in the following summary:

1. The results show 13.2 per cent. of the patients examined infected with intestinal parasites. The parasites found were hookworms (uncinaria americana or anchylostoma duodenale), whipworms, seatworms, Cochin-China worms (strongyloides stercoralis), and eelworms (ascaris lumbricoides). No evidence of infection with tapeworms, flukes or coccidia was found.

2. These results differ from those of most foreign investigators principally in the lower rate of infection, in the absence of tapeworms, and in the presence of hookworms and of the Cochin-China worms.

3. The results show that the percentage of infection tends to vary inversely with the age and with the duration of the institutional life of the patient.

4. The results also indicate that army life is conducive to parasitic infection of the intestine, and, moreover, that a high percentage of the United States soldiers returning from service in the Philippines have intestinal parasites.

5. The presence of a moderate number of worms in the intestine seems to have no relation to the presence of undigested starch and meat in the dejecta or to the litmus reaction of the feces.

* * *

An Experimental Investigation of Trypanosoma Lewisi. Edward Francis. *Bulletin Marine Hospital Service,* February, 1903.

The great importance of a thorough familiarity with trypanosomes is seen when we consider that within the past year the recognition of trypanosomes was forced upon our governmental officers in the Philippines, where the army horses and mules were dying in great numbers, due to the presence in their blood of a parasite which the untrained eye might regard as a spirillum or a filaria, but which proved to be the trypanosome of Surra.

The trypanosomes are animal parasites of large size which are often found in enormous numbers free in the blood plasma, but do not invade the interior of the blood corpuscles. They manifest a striking, vigorous eel-like motility as they dart among the corpuscles, pushing them aside.

Several varieties of trypanosomes have been described. The T. Lewisi is the cause of a non-fatal infection in rats.

While trypanosomiasis as a disease of man has not yet become acclimatized in the United States, there have been reported in foreign journals a number of cases of infection of man with trypanosomes. The disease has been found in West Africa and about the tropics. The symptoms are an irregular intermittent fever, a blotchy condition of the skin, some edema of the ankles, rapid pulse, enlarged spleen, etc. Examination of the patient's blood will reveal the parasites.

The present studies were made entirely with the rat trypanosome. The natural host is the wild gray rat and the sewer rat. These rats harbor the trypanosomes in their blood, and they infect each other. The writer gives the following description of the parasite:

The parasite may be considered in three parts—the body, the undulating membrane, and the flagellum. The body of the parasite is the elongated portion, which has attached to its sides the undulating membrane and to one of its ends the flagellum. The body of the adult parasite measures thirteen to twenty-five micra in length. The flagellate end is considered the anterior end, because locomotion takes place in the direction of the flagellum, while the opposite end, the beak, is designated the hind end. In the hinder fourth of the body there is a rod-shaped structure, called the centrosome. In the anterior end of the body of the parasite there is a large refractile spot, which is regarded as the nucleus.

The undulating membrane is a clear, fine, transparent membrane, which presents an attached border, a free border, and a web. The attached border arises from the centrosome and is continued past the front end into the long free flagellum. In a fresh preparation the body, the undulating membrane, and the flagellum appear to consist of a homogeneous, strongly refractile protoplasmic substance possessing marked contractility.

The parasite stains well by Romanowsky's stain, the nucleus takes a beautiful rose red, and the protoplasm takes a blue color. It is very doubtful if multiplication takes place outside of the body. By inoculation into rats the cycle of development may be observed by the examination at short intervals of the blood of the rat so inoculated. Multiplication occurs by transverse division, by longitudinal division, and by segmentation. All three forms are occasionally seen side by side.

As to the duration of the infection, Kempner found that artificially-infected white rats harbor these parasites in general from four to six weeks. On the other hand, they have been found as late as seven months after infection. With a very few exceptions, a

single infection with trypanosomes renders the rats free from parasites thereafter. The serum of immunized rats is found to be a specific immune serum. If there is added in vitro 1 c. c. of immune serum to 1 c. c. of trypanosome blood, and the mixture is injected into a fresh rat, no infection will follow; likewise if 1 c. c. of immune serum be injected into a fresh rat twenty-four hours before or twenty-four hours after the injection of trypanosomes, it will prevent infection. Emulsions of the spleen, bone-marrow, liver, or brain confer no passive immunity.

Five pregnant rats were inoculated with a view to finding whether their young would acquire an immunity by placental transmission. Although the mother bore a very heavy infection, parasites could never be found in the fetuses, nor did the young show any evidences of an increased resistance to subsequent infection.

If daily examinations are made of the blood of an infected rat, the parasites will be seen to show agglutination during the period of their decline in numbers and disappearance from the blood. The writer calls this auto-agglutination. When well advanced very few parasites are seen to occur singly; they are collected in masses. These masses are made up of adult parasites instead of young forms. These agglutinations the writer considers as evidence of the presence of agglutinin in the rat's blood and as an omen of an impending rapid disappearance of the parasites from the blood. In other words, agglutination is a step towards dissolution, and it foretells the disappearance of the trypanosomes from the blood. As to the methods of transmission of the disease, it was found that by feeding rats on infected blood of other rats the disease would be transmitted within six days. That the disease could be transmitted by fleas was shown by taking fleas from an infected animal and putting them on a healthy rat. After three weeks' time the latter rat was found to have the disease. It is thought by some observers that they are the ordinary medium of infection. Laveran found trypanosomes in the stomachs of lice which infested infected rats. Durham has reported finding trypanosomes in a mosquito.

The finding of trypanosomes in man, associated with a well-defined group of signs and symptoms, is no small contribution to the disentanglement of the diseases of the tropics.

* * *

The Distribution of the Diphtheria Bacillus and the Bacillus of Hoffman in the Throats of Contacts and Normal Persons. S. G. Smith. *Journal of Hygiene*, April, 1903.

The object of this paper is to show that the virulent diphtheria bacilli rarely exist in the noses and throats of healthy persons who have had no opportunity of acquiring them by contact, and that the method of isolating convalescents and healthy persons harboring the bacillus is unquestionably of great benefit in suppressing epidemics of the disease.

The author summarizes his conclusions as follows:

1. Diphtheria bacilli have been found in a considerable proportion of persons who have come in contact with cases of diphtheria or with other infected persons.

2. Such persons have been shown to be a grave danger to public health, especially when frequenting schools or institutions, and to constitute the usual channel by which the disease is spread.

3. Very satisfactory results have followed on the isolation of convalescents from the disease and of infected "contacts," where two or more consecutive negative examinations have been required before release.

4. Carefully-conducted investigations amongst healthy persons who have not at a recent date been in contact with diphtheria cases or infected "contacts" have shown that virulent diphtheria bacilli are very seldom present in the mouths of the normal population. This fact renders the discovery and isolation of infected persons a practicable possibility, and offers a fair prospect of discovering and isolating the majority of them in any outbreak.

5. Diphtheria bacilli are usually distinguishable on morphological and cultural grounds, but whenever possible it is desirable that their virulence should be tested.

6. The bacillus of Hoffman is inocuous to man and is a very common organism in the mouths of the poorer classes. The distribution of this bacillus points to the conclusion that it is carried from mouth to mouth in the same way as the diphtheria bacillus, and therefore its wide prevalence in schools attended by poorer children is significant as showing how widely spread and uncontrollable an outbreak of diphtheria may become unless measures are early taken to deal with infected contacts.

* * *

A STUDY OF THE ETIOLOGY OF YELLOW FEVER. Parker, Beyer, and Pothier. *Bulletin No. 13, Public Health and Marine Hospital Service.*

The chief aim of this study was the identification and classification of the specific organism of yellow fever. All the methods of research were employed—the blood was examined with all modern reagents before the advent of and during the course and convalescence of the disease; all tissues were examined histologically after post-mortems to see if they contained either within the cells or in the intercellular substance any organism or foreign body to which the etiology could be identified. Mosquitoes were contaminated by feeding on well-marked cases, and at varying periods killed and sectioned for histological examination to determine the presence of a developmental or cycle of maturation of an organism belonging to the *sporozoa,* and upon the identification of such an organism to give a practical demonstration of its intimate association with the etiology of the disease.

The results of this work are given in the following conclusions:

1. That the bacteriological examination of the blood of cases

of yellow fever during life and the blood and organs at autopsy performed immediately after death in uncomplicated cases is negative.

2. That *stegomyia fasciata,* when contaminated by feeding on a case of yellow fever forty-one hours after the onset of the disease and subsequently fed on sugar and water for twenty-one days, can, when permitted to feed on a non-immune individual, produce a severe attack of the disease.

3. That the *stegomyia fasciata,* contaminated by feeding on a case of yellow fever, and after varying periods killed, sectioned, and appropriately stained, presents with regularity a protozoan parasite, the *myxococcidium stegomyiae,* that can be traced through a cycle of development from the gamete to the sporozoite.

4. That *stegomyia fasciata,* fed on blood from a case of malarial fever, on normal blood or artificially fed, does not harbor the parasite indicated in conclusion 3.

The report includes a full description of the habitat, anatomy, and histology of the adult *stegomyia fasciata.* Illustrations of the male and female mosquitoes found in Vera Cruz, with sections of same, complete a very interesting report.

Book Reviews.

Consumption a Preventable and Curable Disease. What a Layman Should Know About It. By Lawrence F. Flick, M.D., Founder of the Pennsylvania Society for the Prevention of Tuberculosis; President of the Free Hospital for Poor Consumptives of Pennsylvania; Medical Director of the Henry Phipps Institute for the Study, Prevention, and Treatment of Tuberculosis. Price $1. Philadelphia: David McKay. 1903.

From the author's own brief preface we quote the greater part as follows: "Much unnecessary fear of the contagion of tuberculosis has been stirred up, and the hardships of the consumptive poor have increased correspondingly. The public has been thrown into a panic, so that people turn out the poor consumptive as a pariah, without regard to what shall become of him. All sense of propriety and responsibility seems to have been lost in the absurd fear."

This aspect of the crusade against tuberculosis has been kept steadily in view by Dr. Flick, though it has not prevented him setting fairly before his readers the real sources of danger to the public and of disappointment or defeat to the consumptive. The book is addressed to laymen, and avoids the use of technical language. Indeed, the effort after simplicity is sometimes a bit forced, as in the use of the word spit instead of sputum. In one chapter this apostate verb spit occurs often enough to give the sensitive reviewer a painful tic. Turning back to an earlier chapter one obtains diversion, if not relief, from the title and running heads—The Prevalency of Consumption.

The author's well-known views are well set forth, and they are for the

most part the soundest views. Whether he is right or wrong in minimizing to the point of neglibility some of the factors generally believed to be effective in the spread of tuberculosis, he certainly presents the etiological factors in the just order of their importance, and this is necessary work at the present time. It is a book of good cheer, recognizing the vastness and complexity of the tuberculosis problem, but showing that it can be solved, and that without rigorous or excessive measures. The medical profession can give wide circulation to such a book, and the inquiring layman can find nothing better suited to his purpose, whether seeking to be informed upon the public problem of tuberculosis or upon the questions which the disease brings up in private relations.

International Clinics: A Quarterly of Illustrated Clinical Lectures and Especially-Prepared Articles by Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. Kelly, A.M., M.D. Volume II, Thirteenth Series. Philadelphia and London: J. B. Lippincott Company. 1903.

The present volume of this series is of more than usual interest. It contains twenty-four articles grouped under eight heads. There are six articles on the summer diarrheas of children. The first of these articles is by H. W. Conn of Middletown, Conn., who is not a medical man, but is, perhaps, the foremost dairy bacteriologist in the country, and certainly a very fit man to deal with the subject of milk bacteria and intestinal disorders.

The other contributions to this part of the book come from Alfred Hand, Jr., of Philadelphia, A. C. Cotton of Chicago, Thompson S. Westcott of Philadelphia, Mathias Nicoll of New York, and A. B. Marfan of Paris. Marfan's article describes his *hydric* treatment of infantile diarrhea.

There are two articles on diseases of the pancreas—one by Eugene Opie, and the other by John B. Deaver.

Under the head of treatment there are four articles, of which one may mention that of J. Madison Taylor on the rest treatment as particularly full and interesting. Charles Bouchard has a short article on local treatment, describing his own success in curing rheumatism by local injections of the salicylates.

Other articles worth particular mention are "The Etiology and Diagnosis of Valvular Affections of the Heart," by Thomas E. Satterthwaite; "Abdomino-Pelvic Diagnosis," by E. Stanmore Bishop, and the "Causation and Treatment of Sterility in Women," by J. Riddle Goffe.

A Nurses' Handbook of Obstetrics. For Use in Training Schools. By Joseph Brown Cooke, M.D., Fellow of the New York Obstetrical Society, etc. Philadelphia and London: J. B. Lippincott Company. 1903.

A very good nurses' handbook, written definitely for nurses, and not, as is so often the case, making a bid for the interest of prospective mothers. There are more than 300 illustrations, most of them good, though a few of the full-page photographs illustrate chiefly the misapplication of a short-focus lens.

The choice and arrangement of the subject-matter are well done, the author's style is easy and clear, and the book is well made.

MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

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BALTIMORE, OCTOBER, 1903

NASTY WOMEN.

OUR British contemporaries have recently furnished two examples of a psychopathy which is not extremely rare perhaps, but always hideous, and to the last degree revolting when found as in these two instances in women. The most worshipful characteristic of the feminine mind is its cleanness. It is somehow insulated against nastiness, and throughout long exposure to degrading influences, often, perhaps usually, remains unsullied as the mind of infancy. But once in a great while this white thing will take a stain some shades deeper than this world can impart to the coarser mind of man. Then, with the words of her mouth and the meditations of her heart, does woman show us the nadir of disgust.

The sensation of the year in English literature is the present phase of the Froude-Carlyle controversy. Froude's attempt to expose the relations between Carlyle and his wife has been renewed with a vulgar impudence hardly to be surpassed in Whitechapel. The key of the sanctum of the Carlyles was furnished by a Miss Jewsbury, a literary woman and a friend, or rather parasite, of Mrs. Carlyle. Miss Jewsbury says that such and such signs were apparent soon after Thomas Carlyle and Jane Welsh were wedded. Miss Jewsbury says that Carlyle was "one of those persons who ought never to have married." Mrs. C. confided so much to Miss Jewsbury. Miss Jewsbury gives the address of Carlyle's trussmaker, who knew thus and so. Miss Jewsbury saw the body of Mrs. Carlyle in the hospital just after her sudden death. Miss Jewsbury was present when the house surgeon examined the body in such a way as to be able to discover, and to reveal in Miss Jewsbury's hearing its sexual history. Miss Jewsbury completely anatomized these two distinguished persons. This great man, and beautiful clean woman, according to Miss Jewsbury, had not, as commonplace people have, a place where they might be as nearly one as their natures permitted. Their most intimate seclusion was open to the clairvoyant gaze of "flimsy, tatter-brained" Miss Jewsbury. Miss Jewsbury gave Froude several seances, and Froude recorded her observations. And now the blasphemy is printed. It is the damnedest spot in English literature, and will not out, for Carlyle's fame is secure enough to keep life in Froude's abominable screed.

Sir James Crichton Browne has very completely laid bare Miss Jewsbury's psychopathy, and has fitly characterized Froude's performance. It

must have been hard work for a virile man to take up the pen in a controversy which could have been so much better settled with a gun.

The second example of psychopathy is also found in a literary woman, and her outbreak displayed itself in the literature of the antivivisectionists. The patient is Miss Frances Power Cobbe, who has been reading the works of Claude Bernard and Sir Michael Foster, and says that she has discovered the secret springs of the experimental physiologist's happiness. When such words as *delight* and *joy* occur, as they sometimes do, in scientific writings, they possess, according to Miss Cobbe, a very special significance. She quotes several sentences from the writings of distinguished physiologists, which, in their juxtaposition with reports upon experiments on animals, show that the enthusiasm of the laboratory is nothing more nor less than *libido*. Shade of Heilogabalus, what a thought! The gorge of the antis rose at it, not so much in nausea perhaps, but in prudence certainly; for it was a great tactical blunder, and they made haste to suppress Miss Fanny's unmaidenly ecstasy.

THE LEFFINGWELL-COBBE SCANDAL.

The reek that Miss Cobbe brought forth was engendered, according to her own declaration, by an American physician named Leffingwell, and upon the direct challenge of *American Medicine* to all Leffingwells, one Albert of that name has come forward and said that the charge is one which "no man of honor can stoop to deny." In about 1500 words he says nothing whatever about the lady, but a great deal about her wretched bantling.

Commenting upon Leffingwell's statement, the *Journal of the American Medical Association* says that it is evasive, and *American Medicine* that it is irrelevant. Both these judgments are true enough if the words of such a speaker are to be judged by the standards of honest men. But the speech of Leffingwell is now, as always, to be measured by his own ethical standards, if it be possible for a square man to apprehend such standards. Leffingwell is by no means an unknown man. He is at once the ablest and most unscrupulous enemy that scientific medicine has ever had in America. He hunts the fields of literature with indefatigable industry for prevaricable things, and he has unexampled skill at garbling. His utterances, more than those of any other antimedical agitator, must be judged "by the impression that they are intended to convey rather than by their literal verbal text." Leffingwell is past master of the art of conveying definite impressions while avoiding exact expression. Although there is no example of it, he must needs be able to say exactly what he means, else he could never have acquired his facility at meaning what he does not say.

If what he has said to Dr. Gould seems to Dr. Gould irrelevant, then Leffingwell has imposed upon a candid mind precisely the illusion that was intended. Be sure that Leffingwell, however pointed his address may have seemed, was not talking to the man he looked at. To speak and gaze in one and the same direction is no doubt among his rascally resources, but the present occasion did not bring out that point of skill. In spite of his vigorous assaults on Dr. Gould, I am sure that Leffingwell from first to last was addressing me and a crowd of bystanders. Moreover, he landed his impression as he intended to do. I did not consider his remarks irrelevant to the ques-

tion raised by Dr. Gould. To be sure, he said nothing about poor Miss Cobbe, and he declined to contribute to the support of her scandalous offspring, but he maintained the right of the brat to exist, and he offered plausible clues to the responsibility for its existence. He insinuated that a part at least of this distinction belongs to Dr. Gould. Fancy Gould wearing the scarlet letter!

Dr. Gould has undoubtedly spoken in public about "conceited jackanapes" and "despicable fellows," about "damnable practices" and "atrocities." Leffingwell wants to know what these expressions can possibly mean if their significance is not precisely that of Blatin's sentence, "En France, on prolonge les vivisections pour se procurer d'infames plaisirs."

Leffingwell tells the tale again as he told it to Senator McMillan four years ago. (He did not really tell it to Mr. McMillan, though the Senator believed so.) It was a characteristic Leffingwellian performance. A half-skilled scoundrel would have begun with the devilish conceit of Blatin, quoting next from Krafft-Ebing, and last from Parvin and Gould. But Leffingwell's travesty is a perfect piece of art. He quotes first from Gould and Parvin, honest men who were never before suspected of knowing anything whatever of psychopathia sexualis. These enable Leffingwell to "but touch the shadow of an awful mystery." Next, with a quotation from Krafft-Ebing, whose expertness no one can deny or envy, he lifts a corner of the curtain, and last, after the citation from Blatin, he does not "need to hold the abomination into any clearer light." Of its kind the thing is perfect. Charogne en casserole to ravish the souls of buzzards.

Of the thousands who probably received Leffingwell's letter to McMillan some hundreds at least were led to believe that the testimony of Gould, Parvin, Krafft-Ebing, and Blatin is jointly and severally unequivocal as to the prevalence of sadism among those who make experiments upon animals. If any of them are unconvinced by Leffingwell's refined summary, the testimony of Gould, Parvin, Krafft-Ebing, and Blatin may be tested by inquiring of one's own kin and acquaintance. Leffingwell says that "every intelligent physician over forty years old is perfectly aware of it."

I have not asked my friends for confirmation of the observations of Gould, Parvin, Krafft-Ebing, Blatin, Leffingwell, and Cobbe. But I never knew a sadist, nor a man who claimed to know a sadist, nor a man who knew a man who suspected a third man to be a sadist. Since the question is up, perhaps Leffingwell can inform me if there is a sadist in the free population within 1000 miles of his little town in New York, if authentic records of 100 observed cases are to be found in the literature of a generation. I should like to know how the prevalence of sadism compares in importance with the prussic acid in an almond.

I know two men who know Leffingwell, and I know, besides, a large number of scientific men, butchers, cooks, fishermen, hunters, soldiers, and lunatics; I am forty, intelligent, a physician, and in possession of much worse than useless knowledge; but unless Leffingwell will help me over the gap I am insuperably remote from first, second, third or thirtieth hand information concerning the Leffingwell-Cobbe psychopathy. I even doubt if Leffingwell himself believes or is inclined to suspect that there is in the citations from Gould or Parvin one tint of the meaning imputed, or in the droolings of Blatin or Cobbe a trace of veracity.

Medical Items.

Dr. Frank W. Lynch has resigned as resident obstetrician at the Johns Hopkins Hospital and associate in obstetrics at the Medical School to accept a position in the University of Chicago.

Georgia has at last a State Board of Health. Its first meeting was held on September 10. Dr. Willis F. Westmoreland of Atlanta is president, and Dr. H. F. Harris of Atlanta is secretary.

No case of smallpox occurred in Maryland in September, and but one in August. The State is believed to be entirely free from the disease. One case arriving by rail from Uniontown, Pa., was apprehended immediately and sent to Quarantine Hospital.

Gruesome discoveries have lately been made at Quincy, Ill., in the house formerly used as a private sanatorium by Dr. Carl L. Weber. The skeletons of five women have been found, and are supposed to be the remains of patients of Dr. Weber. Dr. Weber will not be prosecuted, as he is at present in seclusion, a mental and physical wreck.

Ithaca is still entertaining typhoid. The local authorities have failed to fill the places vacated by the resignation of the Board of Health, and Dr. G. A. Soper, the special expert of the State Board of Health, has quit the benighted village in disgust. Some twenty or so Baltimore boys went to Ithaca in September, but not upon any business connected with the typhoid fever.

It is said that E. M. Patterson, a State food inspector of Illinois, believes that the milk of distillery-fed cows infects the people of Chicago with the germ of alcoholic inebriety, and he has stopped the sale of the milk. So Chicago has been saved from an epidemic of drunkenness. A small outbreak would give confirmation to Mr. Patterson's view. It could easily be arranged.

The semi-annual meeting of the Medical and Chirurgical Faculty at Blue Mountain House on September 24 and 25 was unusually well attended. Dr. J. N. MacCormick of Bowling Green, Ky., chairman of the committee on organization of the American Medical Association, was present by invitation, and made an effective plea for the organization of the profession in this State upon the plan proposed by the American Medical Association. The committee on revision of the constitution of the Faculty reported a new constitution in which the name and other time-honored features of our organization are preserved, but containing all the provisions essential to the organization of the profession in Maryland upon the Association plan. The question of medical legislation was discussed at some length, and the subject was referred to a special committee to be reported to the Faculty at a special meeting to be called early in December.

The Henry Phipps Institute for the study, treatment, and prevention of tuberculosis has arranged for the coming fall and winter a series of lectures by well-known physicians on the various phases of tuberculosis. Some of these lectures will be more or less popular in character, and all will be free to the public. The auditorium of the Witherspoon Hall at Juniper and Walnut streets, Philadelphia, has been selected for the purpose, having a seating capacity of nearly 1200 people. The first of these lectures will be given by Dr. E. L. Trudeau of Saranac Lake, New York, during the last week in October, his subject being "The History of the Development of the Tuberculosis Work at Saranac Lake." The following gentlemen have been invited to give the subsequent lectures: Dr. Pannwitz of Germany in November; Dr. William Osler of Baltimore in December; Dr. Calmette, director of the Pasteur Institute at Lille, France, in January; Dr. Herman M. Biggs of New York in February, and Dr. Maragliano of Italy in March. All of them have accepted with the exception of Dr. Calmette, who will come if it is possible for him to leave his work in connection with his Institute and the International Congress on Tuberculosis to be held in Paris in 1904. Subjects and exact dates will be announced as soon as possible. The director and members of the staff of the Henry Phipps Institute extend a most cordial invitation to the profession in general to attend these lectures. It is greatly desired that this inaugural series of lectures given by these gentlemen will prove a success and be largely attended. The following additions to the staff of the Henry Phipps Institute have been made: Dr. M. P. Ravenel has been appointed assistant medical director and chief of the laboratory; Dr. E. A. Shumway has been appointed ophthalmologist, and Dr. J. F. Wallis has been appointed dermatologist.

The first edition of Dr. John Turner's "Physiology" has been sold out, and the author has disposed of the future sales of the book for a period of two years to the Dulany Company of Baltimore. It is said that the work has been approved by the superintendent of public education in Baltimore for use in the public schools, and that it will also become one of the text-books in the State schools. The approval of Mrs. Mary Hunt of Boston remains yet to be secured in order to comply with the laws of Maryland. The author feels sure, however, that after being brought into conformity with Mrs. Hunt's views his book will be no worse than it is at present. The board of education of Porto Rico has Turner's "Physiology" under consideration. Several colleges have made inquiry for the book, desiring to employ it as a students' text-book. Johns Hopkins University was able to secure but seventeen copies, and all of these were appropriated to the use of teachers. The author is now employed upon an anatomy, which he hopes will be his great work. Dr. Turner has made two excursions in light literature. "A Lover's Confessions" is the title of a novel by John Turner, Jr., M.D., just announced by the Neale Publishing Co. The author reports advance orders in gratifying number. Since his return from Europe Dr. Turner has been engaged in the revision of a second novel, for which publishers are contending. The most interesting feature of Dr. Turner's success is, of course, the prospect that his book will be used in the public schools. The text-books now in use are very, very bad, and the fact that they are to be supplanted by Dr. Turner's book is a circumstance upon which Dr. Turner, and he alone, is to be congratulated. It may be remembered that in its first appearance last December Turner's "Physiology" was severely criticised in these pages. In view of the subsequent history of the book is appears that we missed our prognosis. It is a common blunder to undervalue the popular judgment upon scientific works. We made the opposite and most unusual error.

A number of representative physicians of Cumberland valley, between the Susquehanna and Potomac rivers, and including the three counties, Franklin and Cumberland, Pennsylvania, and Washington county, Maryland, met at Mont Alto Park September 8, 1903, and organized a medical society. V. M. Reichard, M.D., Fairplay, Md., was chosen temporary chairman, and J. J. Coffman, M.D., Scotland, Pa., secretary. Upon motion a committee on permanent organization was named by the chairman. Jos. T. Rothrock, M.D., commissioner of forestry of the State of Pennsylvania, made an address on "Open-Air Treatment for Tuberculosis." James Evelyn Pilcher, M.D., U. S. A. (retired), Carlisle, Pa., discussed the subject, and proposed a resolution calling upon the State of Pennsylvania to appropriate sufficient money to enable these sanatoriums to be fully developed. T. H. Weagley, M.D., Marion, Pa., read a paper on "Hemorrhage of Typhoid Fever;" W. T. Phillipy, M.D., Carlisle, Pa., read an essay on "Professional Sociability;" V. M. Reichard, M.D., Fairplay, Md., read a paper on "Medical Organization." The committee on organization then reported a constitution, with scheme of officers and committees, which was adopted. The following are the officers for the first year: President, Dr. Robert W. Ramsey, Franklin county, Pennsylvania; first vice-president, Dr. James Evelyn Pilcher, Cumberland county, Pennsylvania; second vice-president, Dr. T. H. Weagley, Franklin county, Pennsylvania; third vice-president, Dr. J. W. Humrichouse, Washington county, Maryland; secretary, Dr. J. J. Coffman, Franklin county, Pennsylvania; first assistant secretary, Dr. A. R. Allen, Cumberland county, Pennsylvania; second assistant secretary, Dr. P. B. Montgomery, Franklin county, Pennsylvania; third assistant secretary, Dr. C. R. Miller, Washington county, Maryland; treasurer, Dr. John Montgomery, Franklin county, Pennsylvania.; committee of arrangements—Dr. W. T. Phillipy, Dr. J. J. Koser, Dr. John W. Bowman of Cumberland county, Pennsylvania; Dr. David F. Unger, Dr. W. F. Skinner, Dr. A. Barr Snively of Franklin county, Pennsylvania; Dr. Preston Miller, Dr. L. H. Keller, Dr. J. McP. Scott of Washington county, Maryland; committee on program—Dr. J. Bruce McCreary, Cumberland county, Pennsylvania; Dr. H. Clay Devilbiss, Franklin county, Pennsylvania; Dr. V. M. Reichard, Washington county, Maryland; committee on legislation—Dr. David Maclay, Dr. John Montgomery, Dr. H. X. Bonedrake of Franklin county, Pennsylvania; Dr. A. S. Mason, Dr. W. M. Nihiser, Dr. Charles D. Baker of Washington county, Maryland; Dr. J. C. Davis, Dr. C. C. Hummel, Dr. G. C. Borst of Cumberland county, Pennsylvania.

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THE DWARF TAPEWORM (*HYMENOLEPIS NANA*), A NEWLY RECOGNIZED AND PROBABLY RATHER COMMON AMERICAN PARASITE.

By Ch. Wardell Stiles, Ph.D.,
Chief of Division of Zoology, Hygienic Laboratory, U. S. Public Health and Marine Hospital Service.

ADDRESS BEFORE THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND, DELIVERED, WITH LANTERN-SLIDE DEMONSTRATIONS, SEPTEMBER 24, 1903.

Mr. President and Physicians of the State of Maryland:

Before passing to my subject, it is a pleasant duty for me, first, to present to you the compliments of Surgeon-General Wyman, with his best wishes for a successful meeting, and, second, to thank you for the honor you have conferred upon me by inviting me to address you this evening.

As subject of my remarks I have tried to select something of practical as well as of scientific interest, and incidentally a matter not discussed to any extent in American medical literature, for up to the moment of this address it has been known to very few people that there exists a probably more or less common tapeworm in certain parts of this country which has almost entirely escaped attention.

Tapeworms of Man Found in the United States.—If you consult American medical text-books you will find the statement frequently made that the "armed tapeworm," *Taenia solium,* which we contract from eating pork, is the most common tapeworm of man in the United States. This statement is undoubtedly erroneous, for *Taenia solium* is certainly a rather rare parasite among us, especially in the North and West, as is to be expected from our national culinary habits.

If you examine American museum collections you will find that the "unarmed tapeworm," *Taenia saginata,* which we contract through eating beef, is more common than any other museum specimen of tapeworm.

The "broad Russian tapeworm," *Dibothriocephalus latus,* which is contracted through eating fish, is occasionally found in this country, but must be considered as rare.

These are the three tapeworms with which all American physicians are acquainted, either theoretically or practically, but too frequently, I am sorry to say, it seems to be immaterial to our practitioner which tapeworm his patient harbors, although from several points of view, and especially from the standpoint of preventive medicine, the question is sometimes an important one.

These three are not the only tapeworms of man found in this country. Ward has described a *Taenia confusa* taken in Nebraska. A much smaller parasite, the "flavopunctate tapeworm" (*Hymenolepis diminuta*), has been reported for man in this country three times, namely, by Weinland (1858), Leidy (1884), and Packard (1900). Quite recently (1902) I have reported a case of infection with another small parasite, the "double-pored dog tapeworm," *Dipylidium caninum*.

The first four parasites I have mentioned, namely, *Taenia solium, T. saginata, T. confusa,* and *Dibothriocephalus latus*, are all large worms, varying from ten to thirty-two feet in length. The flavopunctate tapeworm and the double-pored dog tapeworm (*Hymenolepis diminuta* and *Dipylidium caninum*) vary in length from about seven to twenty-one inches.

General Characters of the Dwarf Tapeworm.—The tapeworm I wish to discuss this evening is a mere Tom Thumb compared with any thus far mentioned, as it measures from one-fifth to slightly less than two inches (5 to 45 mm.) in length. Like *Taenia,* it has four suckers on the head and the genital pores are lateral, but all of the latter are on the left margin. Like *Taenia solium,* the head has a crown of hooks, which in *Taenia solium* is double, in *Hymenolepis nana* single, and the hooks are of a characteristic form, different from those of *Taenia solium.* Characteristic for the genus *Hymenolepis* is the presence of three testicles in each segment, while each segment of *Taenia saginata* possesses about 1200 testicles. The uterus is also entirely different from that of any tapeworm usually diagnosed by American physicians.

The eggs of cestodes of the genus *Taenia* have a thick, inner, radially striated shell; those of *Dipylidium caninum* occur in clusters; the eggs of the broad Russian tapeworm have a cap on one end, and in the stage found in the feces they do not contain the six-hooked embryo. Eggs of the genus *Hymenolepis* have two, three or four thin shells or membranes, those of *H. nana* having two distinct membranes, the inner one presenting at each pole a more or less conspicuous mamillate projection provided with filamentous appendages.

Historical Review.—The dwarf tapeworm was first described in France by Dujardin in 1845 as a parasite in the brown rat (*Mus decumanus*), and was named *Taenia murina.* This name, however, cannot stand, for it was used in 1789 by Gmelin for a different parasite. Bilharz in 1851 found a parasite in man in Egypt, and the next year this was named *Taenia nana* by Von Siebold, while more recent observations show that this parasite of man is specifically identical with Dujardin's *Taenia murina* of rodents, and that the

FIGURE 1.
Head and strobila of *Hymenolepis nana*.
(After Leuckart 1863, p. 393, fig. 112).

FIG. 4.
Egg of *Hymenolepis nana* as seen in the fresh feces.
(After Ransom from Stiles 1903 a., p. 85, fig. 85.

FIG. 5.
Longitudinal section of an intestinal villus of a rat containing a cercocystis of *Hymenolepis nana*.
(After Grassi and Rovelli 1892, pl. 3. fig. 25.

species belongs in the genus *Hymenolepis*. Since the early observations by Dujardin and Bilharz it has been shown that *Hymenolepis nana* occurs either in man or in rodents, or in both, not only in Egypt and France, but also in England, Italy, Sicily, Russia, Germany, Servia, Austria, Denmark, Siam, Japan, Brazil, Argentine, and the United States. About 100 cases in man have thus far been recorded, most of the patients being males, and the large majority children, commonly between the ages of five and ten years. Sixty-five of these cases were in Sicily, where it has been estimated by Calandruccio that 10 per cent. of the children are infected. This estimate may, however, be too high.

The first case ever reported for the United States was published by Dr. Spooner in 1873. The second case recognized in this country was found by Dr. John T. Moore in Galveston, Texas, who, in the summer of 1902, sent me several specimens of the worm with

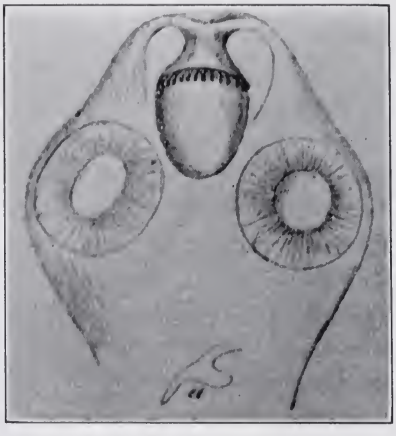

FIG. 2.

Head of *Hymenolepis nana*. *a*. An Isolated Hook. (After Leuckart 1863, p, 394, fig. 113).

which I was able to confirm his diagnosis. Dr. Moore published a preliminary note on his case last April. In October, 1902, I found one case in Charleston, S. C., and in November I found three additional cases in Macon, Ga. This year one of my assistants (A. L. Murray) has found six additional cases in the District of Columbia, and I have recently received specimens from Dr. L. E. Magnenat from a case in Amarillo, Texas. Dr. Magnenat reports an additional case to me from the same family, and has sent me drawings of the eggs he noticed in the stools. [Since this paper was delivered I have had the pleasure of a personal call from Dr. Magnenat, who informs me that he has had two additional cases, making four in all, all in one family.] Finally, Dr. J. B. De Velling of Jackson, Miss., writes me that he has had several cases. [Since this paper was prepared I have instituted a systematic examination of

the children in the orphan asylums of the District of Columbia. Thus far 123 children have been examined, and six of these have been found infected with *Hymenolepis nana;* three cases were found by Mr. A. L. Murray,[1] and one case each was found by Mr. P. E. Garrison,[1] Mr. W. F. Hemler,[1] and Mr. R. H. Olesen.[2] Thus for the United States my laboratory has diagnosed or confirmed the diagnosis positively in eighteen cases within about a year, and we had one additional case, diagnosed as probable from a drawing.

The geographic distribution of the positive and probable cases known in this country is: Philadelphia, one case (Spooner); Washington, D. C., twelve cases (Murray, Garrison, Hemler, Oleson); Charleston, S. C., one case (Stiles); Macon, Ga., three cases (Stiles); Jackson, Miss., several cases (De Velling); Galveston, Texas, one case (Moore); Amarillo, Texas, four cases (Magnenat).

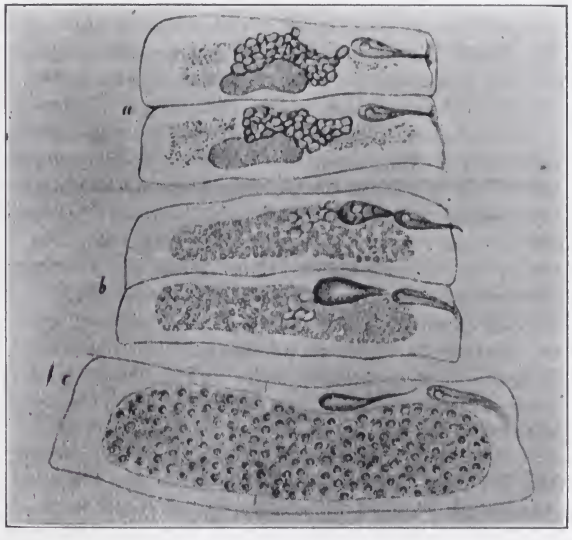

FIG. 3.

Proglottides of *Hymenolepis nana*. *a*. Showing Ovary. *b*. Containing Eggs in Course of Formation. *c*. Showing Eggs in the Ripe Condition. (After Leuckart 1863, p. 386, fig. 114).

In addition, I may say that the United States Bureau of Animal Industry possesses specimens of this same species taken from rats in Maryland and the District of Columbia.

Since September 1, 1902, my division in the Hygienic Laboratory has examined about 3500 patients for intestinal parasites, and we have found the dwarf tapeworm sixteen times, while the beef measle tapeworm, *Taenia saginata,* which is the common tapeworm of our pathological collections, has been found but twice, and we have not had a single case of *Taenia solium,* which, according to

[1] Assistants in Division of Zoology, Hygienic Laboratory.
[2] Student, Georgetown Medical School.

many authors, is the most common tapeworm of man in this country.

In view of the statistics and the geographic distribution just mentioned, I believe the indications are that the dwarf tapeworm, *Hymenolepis nana,* will eventually be shown to be a more or less common parasite in certain parts of this country, and on this account I have recently had one of my assistants (Mr. B. H. Ransom) prepare a very complete paper[3] on the subject, discussing the parasite from both the zoological and the medical points of view.

Life-History of the Parasite.—You will recall that tapeworms run through a somewhat complex life cycle. For instance, the eggs of *Taenia saginata,* when discharged in the feces, contain a small six-hooked embryo known as an onchosphere. This egg with contained embryo is swallowed by cattle; the shell is destroyed by the action of the intestinal fluids, and the embryo wanders to the muscles, where it develops into a larval stage known as a cysticercus. This is the infecting stage, and contains the head of the future strobila or adult tapeworm. Thus there are three stages (embryo, larva, and adult) and two hosts (cattle as intermediate host containing the larva, and man as definite host containing the adult).

In the case of the dwarf tapeworm, it has been proved by Grassi (1887) and Grassi and Rovelli (1892) that when the eggs of this parasite are swallowed by white rats the embryos escape from the shells, bore into the intestinal villi, become transformed into the larval stage (in this case known as a cercocystis), and later fall again into the lumen of the intestine to become adults, with mature eggs, within fifteen days. Thirty days from time of infection eggs were found in the feces. Strange as the life cycle seems, it has been experimentally demonstrated to occur in case the parasite infects rats, and the natural assumption is that the same cycle without intermediate host may take place when the parasite affects man. This assumption is supported by the fact that cases of very heavy infection occur in man, the circumstances indicating auto-infection either by anus and mouth or by reverse peristalsis, for there is no reason to assume that the eggs will develop in the small intestine without first passing through the stomach. The fact that the dwarf tapeworm may develop in the manner described does not, of course, absolutely demonstrate that a life cycle with a distinct intermediate host is absolutely excluded, but for the present we need not consider such a cycle.

Method of Infection.—The regular channels through which man becomes infected by this parasite have not been established through direct observation, but are deduced from certain general facts. It seems probable that rodents, especially rats and mice, are the regular hosts for this worm, and it is known that in certain habitations rats and mice visit the pantries and food, as, for instance, bread.

[3] Brayton H. Ransom: An account of the tapeworms of the genus *Hymenolepis* parasitic in man, including reports of several new cases of the dwarf tapeworm (*Hymenolepis nana* in the United States. [Bulletin 16, Hygienic Laboratory, U. S. Public Health and Marine Hospital Service, Washington. Now in MS.]

Such visitation is especially likely to occur in houses of poor construction and inhabited by the poorer classes. By this means the eggs of the tapeworm may be spread to the food through the droppings of the mice and rats and may infect man.

Ransom will show in his report that 38 out of 105 cases have occurred in inmates of orphan asylums, a poorhouse, and an insane asylum; also that thus far more cases have been reported from cities than from rural districts: that children in poor hygienic surroundings seem especially liable to infection, and that institutional life seems to favor the occurrence of this parasite in children and in adults.

The food supply seems to me to explain quite satisfactorily initial infections either in the individual or in a family or institution, and the demonstrated life cycle without intermediate host offers a further explanation of the heavy infection (by auto-infection) of given individuals as well as of the occurrence of groups of cases in an institution or family, for not only would all persons eating of the same infected food supply be liable to infection, but (as in the case of pinworm infection) a non-infected child sleeping in the same bed with an infected child would be liable to contract this worm.

Position and Number of Parasites Present.—The dwarf tapeworm inhabits the ileum, and there may be a single parasite or several thousand specimens present in a patient. Simultaneous infection with other parasites is common, and as many as four other species have been found occurring with *Hymenolepis nana*. Infection may persist from two months to two and one-half years, perhaps to five years, or longer, or until terminated by successful treatment.

Pathology.—The local pathological changes caused by this parasite seem to be slight, but very possibly the elimination of a toxin, absorbed by the host, plays an important *rôle* in causing the symptoms.

Symptoms.—It must not be assumed that because of the small size of this worm its presence is of no importance. Nor do I feel that we are justified in accepting the extreme view that the symptoms caused by this cestode are more severe than those caused by the larger tapeworms, such as *Taenia*. Ransom, after a careful analysis of 105 cases, concludes that comparison with statistics relative to larger tapeworms indicates that the symptoms produced by the presence of the dwarf tapeworm, while not more severe, apparently occur with greater frequency in a severe form in cases of infection with *Hymenolepis nana* than in cases of infection with the larger tapeworms. This circumstance, however, is considered not to indicate a greater nocuity of the smaller form, but it is probably due to the fact that a relatively greater number of cases are not recognized.

The symptoms produced by the dwarf tapeworm are usually slight, and may be absent entirely even in patients in whom the worms may be present in large numbers. Severe symptoms, how-

ever, such as persistent diarrhea, epileptiform attacks, etc., occasionally occur.

Severe nervous symptoms, apparently determined by the presence of large tapeworms (*Taenia*), were present in at least 10 per cent. of Cobbold's (1883) 100 collated cases. Convulsions were present in only 3 per cent. of Hirsch's (1879) 100 collated cases (also due to large tapeworms), but other phenomena occurred in a considerable number, which will allow an estimate of severe nervous symptoms in about 10 per cent. of the cases. Not more than 12 to 15 per cent. of all the cases of dwarf tapeworm infection reported, or 30 per cent. of the cases in which the presence or absence of symptoms has been definitely reported, exhibited severe nervous symptoms attributable with any degree of certainty to the action of the parasite.

A comparison with Seeger's (1852) statistics for 100 selected infections with large tapeworms tends to show that severe symptoms are less common in cases of *H. nana* than in cases of other tapeworms, while comparison with the statistics of Cobbold and Hirsch indicates that grave nervous disturbances are more common in cases of *H. nana* than in cases of *Taenia*. All of these comparisons are open to criticism, but the first, although, perhaps, the most artificial of the three, probably arrives nearer the truth than either of the others, and it may be affirmed that severe effects from the presence of *Hymenolepis nana* are no more common than from the presence of other tapeworms, and are very likely much less common. The high percentage of severe effects with cases of *H. nana* as compared with cases of other tapeworms is no doubt due, in part at least, to the fact that a proportionately greater number of cases of *H. nana* pass unnoticed than of the larger tapeworms. The presence of a large tapeworm is usually made manifest sooner or later by the passage of segments, while a microscopic examination is necessary to determine the presence of *H. nana,* and, as already remarked, unless there happen to be symptoms which will bring the patient under medical observation, in which case a fecal examination may be made, the chances are very much against the diagnosis of any particular case among the general population. Thus it has happened that a comparatively large number of cases have presented themselves in which severe symptoms were associated with the occurrence of *Hymenolepis nana,* while probably a very large number of cases have never been noticed because there have been no symptoms. A case of *Taenia saginata* or *T. solium,* on the other hand, is very likely to come under observation. The average individual when he has once observed the passage of worms from his intestine usually does not delay, whether there are any other unpleasant symptoms or not, to seek relief from the presence of his unwelcome guests. The case, consequently, stands a very much better chance of being placed somewhere on record. Another point might be noticed in this connection. *Hymenolepis nana* is more especially a parasite of children. The larger tapeworms are more common among adults. It is rather to be expected that children

would in general experience more severe effects from parasitic infection than adults. Nearly half of Cobbold's cases, for example, as noted above, which exhibited severe nervous symptoms were children, while the great majority of all his cases were adults. An indiscriminate comparison of statistics, therefore, without taking into account the question of the age of affected individuals, is not likely to give a true idea of the relative nocuity of the different parasites.

The symptomatology of helminthiasis due to the dwarf tapeworm is summarized as follows by Ransom (from whose manuscript I have made liberal quotations this evening):

"The effects of helminthiasis with *H. nana* are no more severe than may occur from infection with other tapeworms, nor, if it is considered that many cases of the former are probably overlooked, are serious symptoms more common. Although the effects are usually so slight, even though the parasite be present in considerable numbers, that the symptoms are only very mild or absent entirely, it occasionally happens, as with the larger tapeworms, that severe symptoms (persistent diarrhea, epileptiform attacks, etc.) are exhibited. The most frequent symptoms determined by the presence of *H. nana* are abdominal pain, which may or may not be associated with diarrhea; convulsions of various sorts, frequently epileptiform; headache, and strabismus. Nasal or anal pruritus, common in cases of infection with other tapeworms, is rarely seen with *H. nana*. In many cases in which a neuropathic condition is already present, infection with *Hymenolepis nana* is likely to result in an aggravation of the morbose phenomena, and, in general, a predisposition to nervous disease seems to be the important factor in the appearance of nervous symptoms."

Diagnosis.—The positive diagnosis of the presence of the dwarf tapeworm may be made in two ways: First by finding the minute worms or their segments in the stools. You will readily see, however, that this method of diagnosis is much less satisfactory than the same method when applied to the larger tapeworms, for the segments of the dwarf tapeworm are very small and may easily escape attention. The second method, which is the one which should always be followed, is by finding the characteristic eggs in the stools. This diagnosis can be made only by a person who knows how to use the microscope and who knows the eggs of the various intestinal parasites, but for him it is exceedingly easy.

Treatment.—In treating for the dwarf tapeworm male fern is the only drug which has thus far met with any degree of success. The use of kousso, kamala, santonin, thymol, and pomegranate has proved ineffective in the cases in which any of these drugs were tried.

Prevention.—The subject of prevention may be summed up in a few words—cleanly personal habits; keep mice and rats away from the food supply; in case a person is found to harbor the dwarf tapeworm he should occupy a bed alone until all his worms have been expelled.

Current Literature.

PROGRESS IN MEDICINE.

Under the Supervision of Thomas R. Brown, M.D., Baltimore.

THE RELATION OF THE STATUS LYMPHATICUS TO SUDDEN DEATH, DEATH UNDER ANESTHESIA, AND INFECTION.

Blumer (*Johns Hopkins Hospital Bulletin*, October, 1903) presents a most interesting and complete discussion of the status lymphaticus. The sudden deaths associated with hyperplasia of the thymus gland and the lymphatic apparatus in general, many cases of death under anesthesia, and certain cases of death from infectious diseases are believed by Blumer to bear a close relationship to each other. As Blumer well says, "From a professional standpoint it is of the greatest importance that we should recognize the existence of a class of individuals, the subjects of a peculiar constitution, which renders them extremely susceptible to shocks of various kinds, physical, psychical, and toxic, and which may lead to their sudden death from accident which to the ordinary individual would be trivial." Of course, the medico-legal aspect of these cases is especially concerned with those cases of sudden death in apparently healthy infants, where there is a suspicion of foul play. As to the relationship between the status lymphaticus and rickets, epilepsy, and exophthalmic goitre, Blumer believes that it is by no means constant, and that when they do coexist it is merely a coincidence. Blumer's conclusions are based upon nine cases of sudden death occurring in infancy and childhood and upon a study of the literature. Blumer first discusses the question of spontaneous, sudden death associated with the status lymphaticus. Bichat in 1723 noted the association between sudden death and the enlargement of the thymus, but the present interest in the subject dates from 1888, when the work of Grawitz and Jacobi revived it, while the Vienna school, especially Paltauf, were the first to call attention to the fact that the enlargement of the thymus is merely part of a general hyperplasia of the lymphatic apparatus. In some cases this hyperplasia is associated with a hypoplasia of the heart and aorta, which Paltauf calls the chloro-lymphatic constitution. Certain clinicians believe that individuals of a lymphatic constitution can be recognized in many cases, and Escherich states that they usually have a pale, thin skin, pasty complexion, and a good pad of subcutaneous fat, while frequently signs of rachitis or scrofula are present. The superficial lymph glands, especially the cervical and axillary, are enlarged; there is hypertrophy of the tonsils, the circumvallate papillae of the tongue, and the pharyngeal lymphatic apparatus, while the spleen is often palpable, and, according to Ewing, there is an increase of the lymphocytes in the blood. Blumer next classifies the cases according to the clinical features, although he be-

lieves that the immediate causes of death are, in all probability, only cardiac paralysis and asphyxia. He first considers cases found dead in bed, and suggests that many cases of death supposed to be due to overlying are in reality due to the lymphatic state. He next considers cases of sudden death presumably of cardiac origin, and next those presumably of respiratory origin, most of the latter of which may be classed under the general heading of thymic asthma. He gives in detail the history of a case of thymic asthma which proved rapidly fatal and a chronic case which was cured by the operative removal of an enlarged thymus. The last series he discusses are the cases of sudden death presumably of nervous origin. Laub has described cases of what he calls the cerebral form of death from status lymphaticus, usually occurring in young adults who are suddenly attacked with coma or convulsions, causing death in a few hours. The autopsy shows the usual picture of status lymphaticus, with cerebral edema added.

The relation of the status lymphaticus to death during anesthesia is next taken up. Almost all observers agree that death in these cases is due to cardiac failure, and is often instantaneous, though in some cases premonitory symptoms are present in the form of pallor, dilated pupils, weakened pulse, and shallow respiration. All anesthetics that are usually employed seem to be about equally dangerous in this connection, while two classes of cases seem to be especially liable to this accident—patients with goitre and patients with adenoid vegetations.

As to the relation of the status lymphaticus to infection, Daut has shown that cases of diphtheria are markedly modified by the lymphatic state, in some instances the patients having a hoarse, barking cough, attacks of spasmodic suffocation, and weakness of the heart, while in other cases sudden death occurred without symptoms referable to the lymphatic state being shown intra vitam. Blumer reports two cases—one of tetanus, the other of streptococcus infection—each modified by the status lymphaticus, in each of which sudden death occurred.

As regards pathological anatomy, the status lymphaticus shows, broadly speaking, a hyperplasia of the thymus gland and of the lymphatic tissue of the body in general, although the degree and extent of the hyperplasia varies in different cases. Hypoplasia of the vascular symptom, compression of the trachea by the enlarged thymus, subpleural and subserous hemorrhages, pulmonary edema and congestion, and cerebral edema have also been noted.

Histologically in the thymus gland there was a general hyperplasia of the lymphoid elements, associated at times with proliferation of the endothelial cells lying along the trabeculae of the organ, while in the lymph nodes, Malpighian corpuscles of the spleen, the tonsils, and lymphatic apparatus of the intestine there was a general hyperplasia associated with focal changes. Bacteriologically, the cultures were sterile outside of the cases definitely stated to be infected.

Blumer next discusses at length the two theories which account for sudden death in this condition—first, that death is due to mechanical pressure of the enlarged thymus upon structures of vital importance, and second, that death is due directly to cardiac paralysis and indirectly to some form of toxemia. Blumer discusses both of these theories at length, and he advances the hypothesis that the condition that is present in the status lymphaticus is one of lymphotoxemia, which is intermittent; that individuals who are subject to the status lymphaticus are born with an instability of the mechanism regulating the "horror autotoxicus" so far as the lymphatic apparatus is concerned, and that during the attacks of lymphotoxemia such individuals are especially susceptible to the action of bacterial and chemical poisons and to physical and psychical shocks.

The conclusions of Blumer's extremely valuable contribution are as follows:

1. The condition known as the status lymphaticus is a definite pathological entity.
2. It is probably associated with, if not due to, a condition of intermittent lymphotoxemia.
3. It may be associated with sudden death, probably as a result of lymphotoxemia alone in some cases, or as a result of the action of toxic, physical or psychic injuries, which are rendered much more powerful than usual by the predisposing action of the lymphotoxemia.
4. In some cases the sudden death is undoubtedly mechanical and due to asphyxia from pressure of the enlarged thymus on the trachea.
5. The subject of the status lymphaticus can be recognized clinically in some instances.

* * *

ENTEROPTOSIS.

Glénard, with whose name our views regarding enteroptosis are indelibly associated, has during the past two years published two articles stating his present views regarding the etiology, diagnosis, and treatment of this most interesting condition. In his first article (*Journal des Praticiens,* April 6, 13, 20, 1901) he defines enteroptosis as a disease characterized by the signs and symptoms of ptosis of one or more of the abdominal viscera. It may be primary or secondary. Among the predisposing causes he mentions the wearing of corsets, long-standing nervous diseases, laparotomy, parturition, and diseases of the liver, while, according to Glénard, the exciting causes may be traumatic, puerperal, infectious, toxic or nervous. He describes four different forms—the gastro-intestinal, the lithemic, the neurasthenic, and the cachectic, the disease often passing through these various forms as the condition progresses unless the proper treatment is inaugurated. He has found the condition very common, four-fifths of his cases being women. The subjective symptoms are right lumbar pain, loss of memory and the power of concentration, weakness, dyspepsia and constipation, pallor, emaci-

ation, and neurasthenia. The important objective symptoms are epigastric pulsation, prolapse of the kidney and liver, lessened abdominal tension, a cordlike constricted transverse colon, tenderness to pressure in the right lumbar region, the feeling of relief when the abdomen is artificially supported, and, in some cases, ptosis of other of the abdominal viscera. As to the proper treatment, which is considered especially in his second article (*Progrès Medical*, January 11, 1902), he believes that it should be fourfold. It consists of an elastic abdominal bandage, daily saline laxatives and the frequent use of bicarbonate of soda and saline waters, a careful dietary, in some cases meat and in some cases milk being used exclusively at first, with, in all cases, suppression of acids, wines, cereals and fats, and, in cases of paroxysmal attacks of pain, treatment as for biliary lithiasis. Cold hydrotherapy, massage, and electricity are valuable adjuvants. According to Glénard, if this treatment is systematically and conscientiously followed, the symptoms gradually disappear, first the intestinal, then the gastric or hepatic, and finally the neurasthenic.

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THE ROLE OF IRON IN BLOOD-REGENERATION, WITH A CONSIDERATION OF THE ORIGIN OF CHLOROSIS.

From his experiments performed on rabbits Hofman (*Virchow's Archiv*, CLX, Part 2) concludes that all iron, in whatever form administered, is changed in the duodenum, so that, in a form which is not poisonous and in a combination with some form of proteid matter, it may be carried into the various organs of the body by means of the circulating blood. In the spleen and liver, and especially in the bone-marrow, it may then be demonstrated in large amount, and especially in this latter situation the iron-carrying cells are to be found in large numbers. Artificially anemic rabbits showed when they were fed with iron a more rapid regeneration of the red corpuscles in the blood and a larger number of myelocytes and nucleated red corpuscles in the marrow than if they were not so treated. In the case of animals, however, which had suffered no loss of blood, while there was an increase of erythrocytes in the blood, the bone-marrow was poorer in cells and richer in fat than in the control animals. The amount of hemoglobin in all cases corresponded with the erythrocytes, and from a consideration of this and other factors Hofman concludes that the iron stimulates the physiological activity of the bone-marrow and brings about a more rapid ripening of the erythrocytes, but does not directly influence the formation of hemoglobin.

Since the value of the iron depends entirely upon the proportion of iron present, and there are no essential differences in the power of absorption of the various forms, it is utterly unnecessary to give the more expensive iron preparations; in fact, the organic preparations, such as those of hemoglobin, are strongly contraindicated because of their small percentage in iron.

As to the etiology of chlorosis, Hofman speaks as follows: "This

disease in all probability consists of a more or less marked hypoplasia of the bone-marrow, in some cases inherited, and manifesting itself more or less during the whole life of the individual, or a diminished activity of the bone-marrow, which only manifests itself at the time of puberty. The former of these two conditions in severe cases may be associated with hypoplasia of the heart and blood-vessels or even of the genital apparatus, as described by Virchow. This weakness of the blood-forming organ expresses itself in the production of red-blood corpuscles irregular in form and deficient in size and hemoglobin."

The success of blood-letting in chlorosis is to be entirely ascribed to its action as a stimulant upon the bone-marrow, and for that reason this treatment is rational in this disease.

* * *

PERNICIOUS ANEMIA AS AN AUTO-INTOXICATION.

Shaumann (*Sammlung klin. Vorträge,* N. F., No. 287) discusses pernicious anemia in the light of the modern hypothesis that it is the expression of an intoxication, and he regards this hypothesis as furnishing the best explanation of the etiology and pathogenesis of the disease.

In animals similar conditions to pernicious anemia are met with after the use of various poisons, and the anemias due to various intestinal parasites, as the botriocephalus and taenia, are best explained on the intoxication theory. Pernicious anemias after intoxications and infectious diseases, and the improvement in such cases when the gastro-intestinal disturbances are corrected by proper medicines, harmonize with this idea. The same is true in cases associated with pregnancy where the presence of emesis, nephritis, and eclampsia point strongly to there being various toxins present. Apparently the effect of the poison is twofold—it destroys the red-blood corpuscles in the circulating blood, and acts as an irritant upon the bone-marrow, and according to which of these processes gets the upper hand the disease improves or becomes worse until finally the hypertrophic bone-marrow becomes insufficient. The increased proteid destructions and the characteristic spinal-cord changes in pernicious anemia also suggest intoxication.

The poison, whatever it may be, must act differently from that of tuberculosis or malaria, for in pernicious anemia the red-blood corpuscles have a tendency to become larger and richer in hemoglobin than under normal conditions, while the reverse is true in tuberculosis and malaria.

Shaumann opposes Ehrlich's views that megaloblasts are significant of primary pernicious anemia. He does not regard them as essentially different from the normoblasts, and he believes that the effect of the poison in pernicious anemia is to bring forth all forms of pathologically-changed nucleated and non-nucleated red cells.

Shaumann's views are extremely interesting, but the article furnishes only theoretical proofs of the truth of his ideas, and we must still consider primary pernicious anemia as a disease the etiology of which is entirely unknown.

REVIEW IN NEUROLOGY.

Under the Supervision of Robert Reuling, M.D., Baltimore.

The Treatment of Accidents and Neuropathology in Their Different Relations. P. Schuster. *Berliner klin. Wochenschrift,* June 8, 1903.

This article contains a very instructive review of the literature appearing in the last twenty years or more, especially in Germany, on the relationship between accidents and disease of the nervous system. Schuster pays especial attention to accidents to laboring men, and their ability to work after various accidents. Many of the diseases of the spinal cord, such as anterior polyomyelitis, multiple sclerosis, paralysis agitans, etc., are now known in many instances to bear a direct relationship to trauma. Furstner-Nonne has described pseudo-spastic paresis with tremor, also certain forms of deformity of the vertebrae. Indeed, the number of organic and functional diseases which seem to bear a direct etiological relationship to trauma are steadily increasing. The various hysterical conditions following accidents are now well known, and there is probably no more persistent and unique form of hysteria, as far as the symptom complex is concerned, as that seen after accident. The author believes, now that the importance of traumatism is more widely studied and its importance more fully appreciated, that our treatment in the future will become more satisfactory. In his own article he, however, suggests nothing new as to treatment.

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Spinalgia as an Early Symptom of Tuberculous Infection. J. Petruschky. *Münchner Wochenschrift,* March, 1903.

The author claims to have observed that "pains between the shoulder blades" is a frequent symptom in persons who later exhibit symptoms of tuberculosis. He believes this pain can be connected with a primary tuberculous inflammation of the bronchial glands. At one autopsy he found recent secondary infection of one apex, with evidence of old tuberculous lesions in the bronchial glands, although nothing during life had suggested the possibility of tuberculous infection, and the child had died from scarlet fever. He claims that it is possible to detect the presence of the primary bronchial involvement by the spinalgia referred to above—the typical sensitiveness to pressure of certain vertebrae between the second and seventh dorsal. They show a trace of lordosis usually, and appear to the finger to be a little broader, softer, and more elastic than their fellows. The symptom is valuable only when these spinous processes are distinctly more sensitive to pressure than the others. The diagnosis of tuberculosis was confirmed by the tuberculin test in all but two out of seventy-five cases of this spinalgia, while none of them developed a spinal affection; thirty-two were children under sixteen years, and forty-five were adults. In only fourteen

were any signs of tuberculosis to be discovered in the lungs at the time. On the other hand, spinalgia was scarcely ever observed in advanced tuberculosis.

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AMYOTROPHIC LATERAL SCLEROSIS. Joseph Collins. *American Journal of the Medical Sciences,* June, 1903.

The author gives the following description of the pathological changes in a case which was under his observation for two years before death. The patient, a female, had shown symptoms of the disease for three years. The cord was stained by the various staining methods now in general use, and even by the ordinary eosin and hemotoxylin stain well-marked pathological changes were evident. First, there was a uniform disappearance of the ventral horn cells through the entire cord; second, there was a peculiar more or less circumscribed zone of degeneration of the fibers lying close to and encircling the ventral horns in both the upper cervical and upper dorsal regions, also the fibers of the lateral limiting layers; third, there was degeneration of a marginal strip of the anterior periphery of the cord expanding dorsally against the anterior and lateral border of the crossed pyramidal tract and appearing in the shape of a more or less comma-shaped arrangement in the lumbar and sacral regions; fourth, the anterior part of the cord was much deformed, due, no doubt, to a shrinkage of the peripheral fibers; fifth, the neuroglia was increased in the areas of degeneration, both in the white matter and in the anterior horns; sixth, the neuroglia seemed to be coarser, more abundant, and, no doubt, first began its increased formation in the cervical region; seventh, anterior roots show marked degeneration, the Weigert specimens being extremely pale; eighth, in the region of the nucleus of the hypoglossal and the nucleus ambiguus there was evidence of cell degeneration (chromatolysis).

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ARTERIO-SCLEROSIS OF THE SPINAL CORD. Wm. Hirsch. *The Journal of Nervous and Mental Diseases,* February, 1903.

This condition is, as the author points out, one that deserves more careful investigation. It is probably of no very rare occurrence, especially the milder forms. It is rarely diagnosed. It is by no means confined to the aged. He believes that a special predisposition exists. It is well known that sclerosis of the arterial system has been found in infants only a few months old. Hirsch has seen sclerosis of the peripheral arteries and heart in a number of young men between twenty and twenty-five years of age. As might be supposed, a sharply-defined clinical picture of the condition cannot be given. There is one characteristic feature, and that is the early degenerative changes in the anterior horn cells. While the posterior portion of the cord is only affected in the terminal stages, the author naturally attributes this to the fact that the anterior portion of the cord is more vascular, and any disturbance in the blood supply will produce the first pathological changes in the anterior horn.

The clinical symptoms may closely resemble those of tabes or paresis. The Argyl-Robertson pupil, however, is lacking. The cases he reported certainly strongly suggest a special form of spinal arterio-sclerosis.

* * *

Hypnotics, Analgesics, and Resultant Drug Addictions. Smith Ely Jelliffe. *Journal of the American Medical Association,* February 28, 1903.

Jelliffe adopts more or less the classification of Sir James Sawyer for insomnia which he gives in his "Contributions to Practical Medicine." He says:

Cases of insomnia seem to divide themselves into two groups, namely, cases of so-called symptomatic insomnia, and cases that may be called intrinsic insomnia.

Symptomatic insomnia, or the sleeplessness that is one of the symptoms of a disease, attended by severe pain, is not difficult to treat, provided pain, or cough, or high temperature is the only cause.

Intrinsic insomnia is due to various causes, which Sawyer divides into three groups, viz., the psychic, the toxic, and the senile.

Psychic Insomnia.—It is generally taught that the brain in natural sleep is relatively anemic. When the brain is in full working order the cerebral arteries are well filled with blood from which the cells are rapidly receiving nourishment and ridding themselves of waste. During sleep the blood flows in smaller quantity and at less pressure through the brain, and the brain cells are not expending energy, but storing it up, so that any increased mental activity, such as business worry, mental shock, etc., may keep up this increased activity of the brain cells, and so produce insomnia.

Toxic Insomnia.—The toxic causes of brain activity are due to some poison that maintains the arterial supply to the cortex of the brain at such a height and so long that wakefulness is inevitable. These poisons may be in the form of drugs that have become a habit—tea or coffee, alcohol, tobacco. On the other hand, the poisons may be certain accumulated waste products of the patient's own metabolism.

Senile Insomnia.—Senile causes of sleeplessness are due to the age of the arteries. As the smaller cerebral arteries lose their elasticity their walls grow weak, and they are unable to regulate the flow of blood to the brain, which ought to be diminished at night to cause natural sleep.

As the author very rightly points out, the tendency of the present age is to relieve almost the slightest pain by some drug, for "to suffer is no longer deemed brave; it is deemed ignorant; but the little knowledge that will bring relief is too often a dangerous thing."

After discussing the various drugs for insomnia and their use, the author lays down the following rules as to the administration of such drugs:

First. Prescribe the drug which will do the work required to

produce sleep or relieve pain, but let it be so graduated with reference to dosage and choice of remedy that it will be the least harmful if used too steadily.

Second. Keep our mouths tightly shut as to what we are using. Do not say "Take one grain phenacetin, ten grains of salol, one-half grain codein." Give it to the patient if necessary, but do not under any circumstances permit him to know what it is. If the information is imparted, its circle of pernicious activity radiates further than we can imagine.

Third. Wage incessant warfare on the many pirates who provide all sorts of reliefs to the public, going directly to them through the lay press and the magazines.

Fourth. In conclusion, let it be remembered that the introduction of newer drugs, rightly set forth by honest chemists and worthy clinicians, makes most desirable accessions to our armamentarium, but that false pretenses and robbers of an unsuspecting public deserve united condemnation and opposition.

* * *

BLACK CHROMIDOSIS, WITH HYSTERICAL PARALYSIS. James W. Putnam. *New York Medical Journal* and *Philadelphia Medical Journal,* July 4, 1903.

This interesting case presented the following clinical picture: A young woman, aged nineteen years, showed complete paralysis of all four extremities, also cutaneous anesthesia of the arms, trunk, and legs. The reflexes were normal. Babinski reflex absent. No loss of control of the bladder, but the spinal region was excessively irritable. Pressure over ovaries caused pain. The skin of the eyelids and malar regions and the upper portion of the nose was inky black, as also was the edge of the mucous membranes of lips. The sensation of the skin was normal.

The history of the onset is that one day, when in a car, she was very much annoyed by people staring at her because of her peculiar appearance. On reaching home she felt so weak that her muscles suddenly gave way and she sank to the floor. The importance of restoring the confidence of the patient was imperative, and in conversation the author in the hearing of the patient expressed the opinion that the paralysis was of a transitory nature and would improve by manipulation. The patient was assured that she would move her muscles. By positive assurance and command, after making passive movements, she finally made voluntary use of the muscles of the arms and legs. Within a week all trace of the paralysis had disappeared.

The chromidrosis in this case seems to have appeared after a very sudden cessation of the menstrual flow, due to exposure to cold water for five hours or more. It spread gradually over both eyelids, then the upper portion of the cheeks. She observed that whenever she was annoyed or excited or tired the black areas would grow blacker and larger; then when things went smoothly the areas would become smaller and a few shades lighter.

The various forms of electricity had very little, if any, effect. She was sent to the country, and when seen again, five months later, she reported that she had had five similar attacks of paralysis lasting from two to six hours. Under the use of tonics, out-of-door life, and a life away from home she has now recovered, so that she has been well and free from symptoms during the past five months. There was a total period of fourteen months of amenorrhea, with nine months of chromidrosis and six attacks of recurring hysterical paralysis in that time at irregular intervals.

The history of this case shows the close relationship of chromidrosis, with disturbed menstruation and the hysterical state. It coincides in this respect with the cases reported and quoted by Van Harlingen in his article on the subject in the "Twentieth Century Practice of Medicine."

REVIEW IN PEDIATRICS.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

The Paroxysms of Whooping-Cough Treated by Pulling the Lower Jaw Downwards and Forwards. Jacob Sobel. *Archives of Pediatrics,* June, 1903.

In the treatment of whooping-cough two facts have been definitely established—first, that all measures to be efficacious must be directed towards diminishing the number and severity of the paroxysms, and, second, that the success of medicinal treatment thus far has been in inverse proportion to the remedies recommended for the cure of the disease.

Naegeli, to whom the credit of first advocating this method of treatment for the paroxysms of pertussis is due, believes the entire therapy should be directed to the glottis spasm; he says that if we could arrest the glottis spasm the backbone of the disease would be broken. O'Dwyer, Norton, and others agree that this spasm of the glottis is the most distressing and most dangerous thing in the disease.

Naegeli modifies his method according as he grasps the lower jaw from the front or from behind. When in front of the patient he placed the index and middle fingers on the rami in front of the ear, the thumbs on the chin, and with a forcible, but a gentle, pull and pressure he pushed the lower jaw downwards and forwards. If the mouth was opened and the tongue extended he placed the thumb or index fingers in the region of the canines, the remaining fingers on the body of the lower jaw, and thus pulled downwards and forwards.

When behind the patient he placed both thumbs against the angle of the jaw, the index fingers on the zygomatic arch, the re-

maining fingers on the chin, and thus pushed downwards and forwards; or the index fingers were placed in the mouth behind the canines, and thus aided in the manipulations.

Sobel records his experience with this method in ninety-six cases, ranging in age from three months to eight years; all grades and all stages were observed, those with and those without a whoop. Of these there were nine failures (about 9 per cent.). In the large majority of cases the whoop could be controlled. In infants and in young children the method seemed less efficacious than in older ones; they were more easily frightened by the maneuver; their crying rather increased the paroxysm. In some instances, when the lower jaw was pulled forwards at the beginning of the attack, the paroxysms ceased as if by magic, and no whoop occurred.

Sobel sums the results of his experience as follows:

1. Pulling the lower jaw downwards and forwards controls the paroxysms of whooping-cough in most instances and most of the time.

2. The method is usually more successful in older children than in younger ones and infants.

3. As a single therapeutic measure for the control of the paroxysms it deserves a place in the treatment of pertussis, and is as successful as any single drug, or even more so.

4. In cases without a whoop the expiratory spasm, with its asphyxia, is usually overcome, and in those with a whoop the latter is prevented.

5. Mothers, nurses, and other attendants should be instructed in its use in order that the oncoming attacks, especially at night, might be arrested.

6. The manipulation is harmless, painless and easy of application, without any of the ill effects of drugs; it offers a maximum of good effect, with a minimum derangement.

7. The only contraindication to its application is the presence of food in the mouth or esophagus.

8. Patients treated in this manner are less likely to suffer from complications and sequelæ than those treated only medicinally; they emerge from the disease in far better condition, less exhausted and less emaciated, because vomiting has been controlled.

9. It is advisable to try the maneuver in other spasmodic coughs and laryngeal spasms, although my experience has seemed to show that it is far less efficacious in these conditions than in whooping-cough.

10. This method, being directed mainly to the control of the glottis spasm, does not preclude the advisability of supporting and sustaining, guarding his gastro-intestinal tract, establishing equilibrium in the nerve centers, and affording him every possible hygienic advantage.

The Idiopathic or Essential Dropsies of Childhood. Arthur W. Fairbanks. *The American Journal of Medical Sciences,* September, 1903.

The characteristic feature of this condition is the appearance of edema in one or more parts of the body, without albuminuria or sedimentary evidence of organic disease of the kidneys, without clinical or post-mortem evidences of organic disease of the heart or kidneys. It occurs in children who, previous to and during its presence, are otherwise well, or it occurs, accompanied by symptoms more or less peculiar to it, in children previously and subsequently well, or, finally, it occurs immediately preceding, accompanying, or immediately succeeding some disease other than the organic conditions above mentioned. The condition may be acute, subacute, or chronic in its onset or in its course.

The writer reports nine cases of this character which have come under his observation, and collected in the literature 168 cases of this affection which he terms "essential" dropsies. These cases are all in children under fifteen years. In 25 per cent. of the cases anemia is definitely stated to have been present. In 43 per cent. of cases there was gastric or enteric disturbances, usually diarrhea. The association of anemia, marasmus, and subnormal temperature with this affection is chiefly confined to the first two years of life. Of all the abnormal features that may be found associated with "essential" edema, far the most common is the disturbance of the gastro-intestinal tract.

Manifold causes have been regarded as the etiological factor in the causation of these so-called essential dropsies. No one condition has been more generally considered a cause than anemia, unless it is exposure to cold. Some hold the dropsy to be of toxic origin. Osler reports a case in which heredity is an apparent element. The writer considers the etiology under a predisposing and exciting cause. In a large majority of cases this affection is produced by a reflex sympathetic disturbance, having its origin in a direct exciting cause acting on any portion of the sympathetic system, but producing its effect through the terminal filaments in the vessel walls. The exciting cause may, in itself alone, evolve such reflex, even in the normal condition of the nervous system, but there is usually a predisposing condition antedating the action of the exciting cause. As predisposing cause he considers anemia, marasmus, including subnormal temperature, and heredity. As direct exciting causes he considers toxic, chemical, including the action of food or drugs, extremes of temperature, especially cold, trauma, peripheral irritation, and psychical disturbances.

The affection is probably always secondary in the sense that it is induced by an exciting factor, often favored by inherited or acquired predisposition, and is "essential" or "idiopathic" only in the sense that it is not caused by disease of organic origin.

Distinction Between Cow's Milk and Woman's Milk. Kerley, Gieschen, and Myers. *Medical Record,* Vol. LXIV, No. 6.

It has been taught for many years and in many text-books that one of the chief distinctions between cow's and woman's milk is that the former is acid, while the latter is neutral, or slightly alkaline, and therefore it is advisable to add some antacid to cow's milk in its use for infant-feeding. The work of the authors seems to throw some doubt on this conception. After a very careful study of milk, using the most recent methods of tritration, they conclude as follows:

1. Breast milk and cow's milk are both acid.
2. The litmus-paper test for milk is unreliable because of the variation in the quality of litmus paper, and the litmus taking part in the reaction and not acting as an indicator.
3. The effect of adding lime water or bicarbonate of soda to feedings is to retard or inhibit the formation of curds by rennet.
4. The teaching that lime water or bicarbonate of soda should be added to fresh milk simply because they are antacids is erroneous.
5. The addition to milk of alkalies or salts that become alkaline in solution is an empirical method of aiding digestion by preventing the formation of dense curds that would slowly leave the stomach and be difficult of digestion in the intestine.

* * *

A Report of Eight Cases of Pneumonia in Infancy Treated With Antipneumococcus Serum. John Lovett Morse. *Archives of Pediatrics,* July, 1903.

During the last dozen years many attempts have been made to produce a serum of therapeutic value in the treatment of pneumonia in man. The Klemperers were the first to produce immunity experimentally. They first used filtered cultures and succeeded in obtaining a serum which protected other animals against fatal pneumococcus infection. They were able to demonstrate a protective body in the blood which they termed antipneumotoxin. Its therapeutic value was, however, very feeble. Its action was largely, though not entirely, antitoxic. Other investigators have used sera obtained from men ill with or convalescing from pneumonia. Their results have been equally unsatisfactory. Others have, by the use of living cultures, produced sera which protected against virulent pneumococci and possessed a certain therapeutic value. These sera exert a direct destructive action on the bacteria, but probably have little or no effect on the separable toxines of the pneumococcus—that is, they are anti-infectious rather than antitoxic in their action. Such sera are usually known as antipneumococcus sera. The results with these sera have likewise been unsatisfactory, probably because that while they are rich in the immunizing body, they are probably lacking in the end body or complement.

Morse reports the results of his experience in the treatment of pneumonia with these sera.

In all there were eight infants. The serum was injected every four hours, while the temperature was taken in the rectum every two hours. The amounts of sera used varied from 50 cc. to 180 cc.

A study of the charts appended fail to show that the serum had any effect on the temperature in a single case. In no case in which the time of the onset could be determined was the course of th disease shortened. In fact, the crisis occurred later in these cases than is usual. No effect on the rate of the pulse or respiration was noted in any case. Nothing was noted to justify the assumption that the subjective symptoms were in any way relieved. The physical signs increased in six cases while the serum was being used; in the others there was no change. Two cases developed purulent inflammation of the middle ear, and two cases empyema. Two died—one of nephritis and one of cardiac failure. In neither case was there anything to show that death was due to, or hastened by, the use of the serum. The serum was well absorbed in all the cases except one, in which it caused swelling, tenderness, and induration about the seat of injection.

About all that can be said for the serum in this series of cases is that while it apparently did no good, it certainly did no harm.

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The Etiology of Summer Diarrheas of Infants. Duvall and Bassett. *Centrallblatt f. Bakt.,* December 22, 1902.

This is a preliminary report of their study of the cases of diarrhea occurring at the Thomas Wilson Sanatorium during the past summer. They succeeded in isolating in forty-three cases an organism which proved to be identical with the bacillus isolated from cases of acute dysentery in adults by Shiga, Flexner, and others. This bacillus was obtained from the stools, from the intestinal mucosa at autopsy, and from the mesenteric glands and liver. They failed to find the organism in the stools of twenty-five healthy children, nor in simple diarrhea. Agglutinative reactions were obtained when the organism was tested (1) with blood serum of patients from whom they were secured, (2) the serum of other infants suffering with summer diarrhea, (3) the serum of patients with acute dysentery, and (4) with antidysenteric immune serum, but not with the blood serum of healthy children. They conclude that the summer diarrhea of infants is identical with the acute bacillary dysentery of adults.

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Cream for the Home Modification of Milk. W. C. Townsend. *Boston Medical and Surgical Journal,* April 16, 1903.

The writer's conclusions are as follows:

1. Centrifugal cream is probably less desirable for infant-feeding than gravity cream. As obtained from dealers it is often far from accurate in percentage.

2. Siphonage for obtaining gravity cream is an accurate method, but one requiring considerable skill to perform accurately and safely.

3. Dipping off the top milk is an accurate and safe method, if reasonable care is used.

4. The method for obtaining gravity cream by pouring off the top is very accurate and extremely simple. There is no instrument to be bought and kept clean. By this method it is possible to obtain cream of any desired percentage up to 26 per cent.

5. To ensure perfect accuracy, frequent examinations with the Babcock machine are required; but for practical purposes this is not necessary, provided the mixed milk from a well-regulated dairy is obtained.

Society Reports.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

SEMI-ANNUAL MEETING, HELD SEPTEMBER 24 AND 25, 1903, AT BLUE MOUNTAIN HOUSE, WASHINGTON COUNTY.

THURSDAY, SEPTEMBER 24—AFTERNOON SESSION AT 2 P. M.

In the absence of the secretary of the society Dr. Gardiner was elected secretary *pro tem.*

Opening Address by the President, Dr. Eugene F. Cordell.—After preliminary thanks for the honor done him in his election to a chair filled for over one hundred years by prominent medical men, Dr. Cordell discussed some of the important questions which the Faculty has sooner or later to face, particularly those resulting from the increasing number of its members and the consequent inadequacy of the present quarters. After a reference to the influence in the community of medical co-operation on all public questions with which the doctor has to do, he laid particular emphasis on the present pressing needs for larger facilities for the Faculty, calling especial attention to the cramped condition existing in the library. The growth of the society has brought about a crisis in its affairs. The library shelves are full, and there is no room for more books. There are about 175 seats in the assembly hall, and the society has 700 members. The new building which is needed will cost $100,000, and a special committee should be appointed to raise this amount. Possibly, also, a ladies' auxiliary should be formed. A short summary of the literary resources of doctors practicing in Baltimore was made, showing that of the seven public libraries, with a total of about 26,000 books, only three are open for borrowing. The address was, on motion, referred to the publication committee.

Climatic Influence on Diseases—Dr. Thomas H. Brayshaw.—Climatic influence has hitherto been undervalued. The various factors which, taken together, we know as "climate" are temperature, wind, locality, soil, etc. The influence of locality on temperament and on disease is shown by a compari-

son between the peoples who live in the mountains and those who live on the plains or between the inhabitants of Europe and Africa. The influence of the soil is evidenced by the fact that fertile land almost always is inhabited by cheerful peoples. The influence of *unusual* climate, that is, of climatic conditions to which men are not accustomed, was shown by the effect of the African campaign on English soldiers.

All respiratory diseases except those due to tuberculosis seem to be controlled by atmospheric conditions. This is true also of the so-called "rheumatic" and "malarial" diseases. The change brought about on land hitherto unclaimed by clearing it for exposure to the sun's rays and by the removal of trees shows the effect of climatic conditions in the production of disease. Reference was made to certain observations in Maryland as proof of the theory that malarial diseases are due to alluvial conditions.

What the Country Physician Can Do to Prevent or Limit Epidemics of Typhoid Fever—Dr. John S. Fulton.—I want first to state and emphasize the fundamental difference in regard to this question between a city and a country physician. The former treats only the typhoid patient, and is concerned only with the hygiene of the sickroom, the municipal government taking care of the hygienic part of his problem. The country physician, however, must not only treat his patient and dispose of the excrements, but also superintend the control of the disease and the prevention of its spread.

The physician's duty in regard to typhoid fever begins with the question of diagnosis, and here he is a large defaulter. A fact which the Cuban War first brought emphatically to our attention is that 45 to 50 per cent. of the cases of typhoid fever go undiagnosed to the end, nearly all of the blunders made by the army physicians at that time being to call typhoid fever malaria. The mistake of confusing these two fevers is seen, however, even more clearly from the fact that every year fatal cases of malaria are reported from every single county of Maryland, although the simple fact is that malaria causes death in Maryland very seldom, and probably the only *fatal* malaria cases which occur in this State are imported from the tropics. Even from Washington county, where malaria, so far from being a fatal disease, does not even cause disability, deaths are reported regularly. This mistake is due to the feeling that all the classical symptoms must be present before a diagnosis of typhoid fever can be reached. The safer attitude, however, for a country physician to take is to consider all continued fevers which do not yield to quinine typhoid until another diagnosis is definitely reached.

The country physician's second duty comes from the important relation between the water supply of a household or community and the spread of typhoid fever there. There is no question that this relation is somewhat less important than was once thought, but the fact remains that the majority of cases of typhoid fever are still traceable to the water supply. The most dangerous feature is that most country places have a dual water supply, and the inhabitants are careless enough to drink the water intended for other purposes, such as cooking, washing, etc. This is particularly seen in summer resorts, schools, etc., and the country physician must ever have it in mind. He must also remember the importance of flies in the spread of this disease, and he should always persuade his patients to screen their houses in this way, if possible, to eliminate one method of contagion.

The fourth duty which the country physician has in regard to typhoid fever consists in the care of the patient, which is, of course, the essential thing. The doctor should by all means insist that the bed of the infected person be surrounded by a mosquito net, and that excreta shall be disinfected immediately upon their discharge. To provide for perfect disinfection of the excrements is, of course, to solve the problem of typhoid epidemics. This, however, is not an easy matter. Quicklime is perhaps the best disinfectant we have for this purpose, and a large amount of it should be bought as soon as the diagnosis of typhoid seems reasonably probable.

The physician in charge should, finally, never forget that the patient continues to be infectious long after convalescence. Just how long we do not know, but certainly typhoid bacilli may be isolated from the urine of some patients many months after the disease itself is over, and it would seem that this fact indicates that typhoid urine should be treated as infectious long after convalescence is established.

The Best Means to Employ for the Early Diagnosis of Typhoid Fever—Dr. T. B. Futcher.—I want first to emphasize the fact that typhoid fever is the most prevalent continued fever in this country, and therefore it should in any case at all suspicious or obscure always be thought of. In the classical cases the diagnosis is, of course, easy. The ones hard to recognize are those in which the ordinary text-book symptoms are entirely absent or present only in part. The following are some of the helpful points in making the diagnosis: (1) The temperature chart: A gradual rise in temperature at the onset of an illness should always be suspicious. Difficulty arises, however, in the fact that the physician sees the case at a somewhat later date, and the temperature is by that time a continuous one. (2) The ratio between the pulse and fever: Most febrile diseases increase the pulse about eight beats for a degree of temperature. In typhoid fever, however, the pulse does not show this increased rate, the only other disease which exhibits this feature being tuberculous meningitis. (3) Dicrotism: This is, of course, met with in other conditions, but in typhoid fever it is most frequently seen. (4) Enlargement of the spleen: This physical sign is of great importance along with other symptoms, but it is, of course, seen in other acute infections. (5) Rose spots: These, according to Dr. Osler, give us the most important single physical sign. Indeed, the character of the temperature, the enlargement of the spleen, and the rose spots are the three most important diagnostic features of the disease.

The cases of typhoid most likely to be missed are those with the almost typical onset of cerebro-spinal meningitis, pneumonia or other respiratory diseases. The disease may simulate appendicitis, three patients with typhoid fever having been operated on at the Johns Hopkins Hospital under this mistaken diagnosis. The cases with marked renal symptoms and the ambulatory form are also easily overlooked. The majority of cases should be recognized, however, and the following three more accurate methods of diagnosis should be kept in mind: (1) The Widal test: This is usually positive on the ninth or tenth day, but it may be absent until later. The State Board of Health has made this test available for any physician in Maryland. (2) Blood cultures: These are of not much practical use, but they may be diagnostic earlier than the Widal test, and the bacilli can be isolated in 40 to 80 per cent. of the cases.

(3). The leucocytes: These should always be counted, and will always be found to be subnormal.

Dr. Stone: The extreme importance of the care of the patient himself should be emphasized. The water danger is now well known among the laity as a result of newspaper information. Boiling water and the burying of stools are the best practical means of disinfection known.

Dr. Mason: I would like to ask how the diagnosis of typhoid fever is to be made in the absence of characteristic symptoms and of the Widal reaction.

Dr. Watson: The diagnosis of typhoid fever is easier in the city than in the country, and malaria may be almost regarded as a clinical rarity in Baltimore. I diagnose malaria nowadays by the therapeutic test without using the microscope, but I usually find the protozoa when I *do* look for them.

The point was made that some cities which put in good water-works fail to put in good sewerage systems, and therefore the underground sources become polluted.

The effect of large doses of quinine on the early typhoid temperature was referred to, and Dr. Watson was asked whether it is wise to confuse the diagnosis in early cases by thus masking the onset.

Dr. Fulton, in reply to a question, said that only 2 per cent. of the suspected cases of malaria examined in his laboratory turn out to be malaria. If one can eliminate malaria, the diagnosis becomes rather easy. There is a good deal of malaria in Maryland, but the point to be borne in mind is that there is no mortality from it.

Dr. Futcher, in reply to a question, said that a second attack of typhoid fever is possible and cases have been reported. The patients showing marked cerebro-spinal symptoms are in a toxic condition, and the leucocyte-count is, even in these cases, also low. This is true, too, of the bronchitis cases. In the pneumonic patients, however, an occasional leucocytosis is seen. There is no such disease as typho-malaria, and the mortality reports should not be falsified by making any such return. It is bad, if not dishonest, practice to make this diagnosis.

EVENING SESSION AT 8 O'CLOCK.

The Dwarf Tapeworm (Hymenolepis Nana)—Dr. C. W. Stiles.—(See page 405).

Was It Wise for the American Medical Association to Change the Code of Ethics?—Dr. D. W. Cathell.—The profession had, previous to the last meeting of the American Medical Association, been divided between the "codists" and the "no-codists." The change in the code is expected to destroy this distinction and make the profession a unit. The change was a wise one for the following reasons: (1) The non-intercourse section, though framed to rule out homeopathy, really promoted it, for it laid the orthodox position open to the charge of dogmatism, and so made homeopathy a subject for popular sympathy. (2) The hard problem of free or restricted consultation is solved by the survival of the fittest, and not by codes. (3) The code is only meant for advice, and should have a non-committal title. (4) The code will not guide where gentlemanly instincts are not present. (5) The exclusion of consultations with irregular physicians is opposed by the people, the press, and the pulpit. (6) The physician should consider it a humanitarian duty to

give advice to anyone, even to an "irregular," if he may thereby prevent suffering. (7) The old code has kept out of medical societies many men who could not endorse it, and the change will therefore increase the size of these organizations. (8) The change will result in the recognition of intelligent homeopaths who really differ very slightly from their regular brothers.

The Organization of County Medical Societies and Their Affiliation With the Faculty—Dr. Chas. M. Ellis.—Fraternal relations among physicians have increased in the past decade, and the outlook for future organization is good. The greatest stumbling-block to county societies is their effort to accomplish too much. The first need is to bring medical men together, and the simpler the means the better. Membership in the national society should be only by way of the local organization. The success of the society is roughly measured by the attendance at the annual meetings, and programs should be avoided which are too long, too much given up to specialists, and devoted very little to needs of the family doctor. The speakers should be masters, and the old custom of having a review of various departments of medicine made at these meetings by someone in authority was a good one.

Dr. McCormick, chairman of the committee on organization of the American Medical Association, spoke on the subject of medical organization. About one in four of the medical men in this country have never been members of any society. The relations of doctors to one another was shown by reference to Dr. McCormick's present observations to be in a woeful condition. Suspicions are common to all vocations requiring segregated lives, but where organization and acquaintance are necessary, as in the law, peace rules. One-half of the doctors in this country receive practically no medical literature. To eliminate these evils the American Medical Association suggested a new plan which has for its purpose the organization of the profession everywhere. This, if successful, will make it possible to control all legislation, both State and national. In Kentucky and in other States the plan has been tried, and has proved successful. The proposed amendments to the Faculty's constitution are eminently wise and should be adopted if they are ratified by the committee. It will then not be necessary to beg for recognition at Annapolis; it can be demanded.

FRIDAY, SEPTEMBER 25—MORNING SESSION AT 9.30.

Tuberculosis of the Urinary System in Women: A Report of Thirty-five Cases—Dr. Guy L. Hunner.—I wish to discuss the diagnosis rather than the treatment of this condition, as this is to the general practitioner the more interesting feature. My series shows the following features: (1) Exclusive of all cases which are a part of miliary tuberculosis, the genital organs are more frequently affected with tuberculosis in the female than in the male. (2) It is a disease of young adults. (3) A family history of tuberculosis is frequently present. (4) A history of tuberculosis elsewhere (knee, lungs, etc.) or a history of some previous disease affecting the kidney (scarlet fever, for example) is often met with. (5) The conditions most frequently mistaken for urinary tuberculosis are appendicitis, gallstone, typhoid and malarial fevers, and the crisis of movable kidney. The duration of the disease varies from two to seventeen years. The origin is practically always the kidney, primary tuberculosis of the bladder being rare, but the bladder symp-

toms are usually the ones complained of. The local symptoms are pain in the back and slight disturbance of the bladder functions. The kidney may be palpated and the ureter felt through vagina and rectum. The tuberculin test and injections into the guinea-pig help in the diagnosis. Finding the organisms in the urine makes the diagnosis sure. The treatment in this series was entirely surgical, topical bladder treatment being useless in this condition. Various operations were tried, and the series goes to show that nephrectomy with ureterectomy is probably the best procedure. Of the cases 14 per cent. died, and 63 per cent. are still in good health.

Dr. Watson: I have thirty to fifty cases of floating kidney in my personal practice. I would like to ask the surgeons what is the result of palliative treatment. I have used the abdominal bandage with some advantage and hesitate to advise operation, but I hate to condemn a woman to wear a bandage for many years. I would like also to ask what is the cause of fleeting nephritis appearing in pregnant women with no apparent origin for the infection.

Dr. Branham: In most cases the etiology of floating kidney is a flaccid abdomen. In young women, however, I have found a slight lateral curvature of the spine to be the cause, and my treatment is directed to this deformity. Operation should be advised only where the symptoms are severe and palliative treatment unsuccessful.

Dr. Kirby: Treatment of floating kidney must include the improvement in the patient's surroundings, permanent suture, and the wearing of an abdominal bandage. I had a case recently in which a severe nephritis suddenly appeared without cause. The kidney was explored; colon bacillus and staphylococci were isolated from it. Recovery took place, and no source of infection was found.

Dr. Hunner: The chief cause of movable kidney is the funnel-shaped female thorax. Anything increasing this natural condition shoots the kidney out of the "kidney space." The treatment must include correction of the accompanying neurasthenia and the accompanying indigestion. Probably Finney's gastro-dudenostomy will often be of value. The physician himself should always oversee the fitting of the abdominal binder. An operation should be done for Dietl's crises in the absence of general enteroptosis, and the results are good. Nephritis in pregnant women is due to pressure on the ureter. Treatment should be expectant for a week or so, and then abortion should be done.

Dr. Watson: A bandage does not keep the kidney in the *right* place, but in *one* place, and so prevents kinking of the ureter.

Omental Suture for Ascites—Dr. Jos. H. Branham.—Dr. Branham described Talma's operation and its rationale, and then reported a case from his own practice. The patient was an alcoholic woman, and had suffered several years from indigestion. When seen she was edematous and jaundiced, and great effusion had taken place. The abdomen was opened, the fluid removed, and the median portion of the omentum sutured to the parietal peritoneum. The edema of the legs disappeared, and for six months the patient was better than she had been for years. She then had a pleural effusion, which was drawn away, but there were no signs of recurrent ascites. It may

be that the latter fact points to an actual cure of the degenerative process in the liver.

AFTERNOON SESSION AT 2.30.

Needed Amendments of the Medical-Practice Act—Dr. J. McP. Scott.—The features of the present laws which suggest modification are: (1) The provision which allows candidates to pass their subjects one or two at a time. (2) The provision which allows medical students to pass their preliminary subjects early. The foundation rock of reciprocity between States is the possession of a "home character," and this is the basis of the so-called "District of Columbia" section. The enforcement of the law depends on the action of individual members of the profession. Cases cannot be successfully prosecuted without facts furnished by single men.

The question as to whether or not any consideration of the proposed amendments at this time is opportune or not was discussed at some length. *Dr. Griffith* held that such discussion was untimely, but *Dr. Reik* said that in order for prompt action to be taken in regard to the legal aspect of the question the sooner the matter is settled by the Faculty the better. What the law has really done in regard to this matter has been to prosecute the honest candidate for the profession rather than to prosecute the quacks and the charlatans. One of the weakest points of our law is the poor provision it makes for prosecution which is not done by officials and still is practically impossible for individuals. *Dr. Earle* said that the law question should be thoroughly discussed before the law is finally framed.

On motion, a committee of eleven was appointed to report to a special meeting of the Faculty to be held in November.

Book Reviews.

AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY. Under the general editorial charge of George M. Gould, M.D. Surgery. Philadelphia and London: W. B. Saunders & Co. 1903.

We are so accustomed to hearing of continental superiority in the medical field that there is some patriotic pleasure in reading an American book which can well hold its own in the international competition. Such books are, indeed, rare, and, amid the mass of commonplace literature, protrude noticeably, but Dr. Gould's Year-Book for 1903 is one of them. The previous efforts of this author had led us to expect a good deal, but the busy practitioner, the specialist, and the student of scientific medicine alike will find that they had not led us to expect too much. The volume before us certainly compares favorably with similar books in foreign tongues—with Hildebrand's "Jahresbericht," Schmidt's "Handbuch," etc., for example—and it may, indeed, be thought to be in some respects superior to them. One cannot but be struck by the consistent excellency of the reviews which make up the American Year-Book. There is everywhere evident that compactness and emphasis of essentials which are the vital attributes of a good digest, and the admir-

able virtue of omission, more difficult of attainment and less frequently met with, is equally obvious throughout.

One feels that every article or book dealt with has been well treated, and that the really useful part of it has been passed on to the medical profession through the reviewing medium, the uninteresting and valueless portion having been kept back, with a resultant saving of time for those who are too busy to indulge widely in medical literature.

If any criticism of Dr. Gould's book is to be made, it would be probably easiest to attack his discrimination in the selection of articles treated. We find, for instance, many pages devoted to two old problems, which by this time ought to have been well thrashed out—"The leucocyte question in appendicitis," and its twin, the "When-shall-we-operate question," while the really important and somewhat neglected problems connected with the placing of gauze in appendix cases still receive scant consideration. To say this, however, is to say the worst, and it is, after all, an adverse judgment not so much on the work which Dr. Gould has done as on the untimeliness of so much that appears in the medical literary world. Text-book articles continue to be written and rewritten on subjects already done to the death, and the reviewer finds that if he is to give us any yearly digest at all he must deal with many commonplace articles which his discrimination would otherwise have rejected.

The present volume, for instance, contains a review of an article by Vandeveer and Elting on actino mycosis, with the report of a case, the complete text-book article being merely introductory to the report. Rühran's paper on the same subject, written in recent years, made any subsequent publication entirely unnecessary except in so far as cases were to be reported or observations brought forth which would be a contribution to the statistics of actino mycosis. The same criticism may be made in regard to Abbe's paper on "Surgical Complications of Typhoid Fever." This subject should certainly have been considered closed when Keen's classical article appeared, and to write further about it, except for the purpose of reporting original observations or filing similar data, was to increase medical literature without enriching it.

In general, however, Dr. Gould and his colleagues have combined with the excellence of their work a commendable discrimination in the choice of their material, and the book, as a whole, is one of which the American profession may be proud and for which the busy part of it may be exceedingly thankful.

The names of Dr. Gould's editorial colleagues are sufficient warrant for the worth of the departments of the book dealing with the more specialized branches of surgery. It is enough to say that the high standard of excellence set in the pages of the book devoted to general surgery is maintained in the parts given up to obstetrics, gynecology, etc. It is rather interesting to note that the last chapter of the book is devoted to anatomy, and the question suggests itself whether this does not reflect the general feeling among medical men of the more intimate connection between anatomy and surgery than between anatomy and medicine—a feeling which, in reality, is more or less contrary to the logic of things. We notice also that gynecology occupies a chapter by itself. This is, of course, inevitable in the present state of affairs,

but we wonder whether in future volumes of American year-books published at no distant date gynecology may not, in deference to the state of affairs existing then, be treated, as it seems it logically *should* be treated, along with general surgery.

THE SURGICAL DISEASES OF THE GENITO-URINARY ORGANS. By E. L. Keyes, A.M., M.D., LL.D., and E. L. Keyes, Jr., A.B., M.D., Ph.D. With 174 illustrations in the text and ten plates, eight of which are colored. New York and London: D. Appleton & Co. 1903.

The present volume is the second revision of Van Buren and Keyes' text-book, which appeared in 1867. This revision has been necessary to keep abreast of the advancement in this branch of surgery in the past few years.

In the first, and more particularly in this revision, there has been a tendency to eliminate the sections dealing with purely venereal diseases and to make the subject-matter conform more closely to the subject of surgical diseases of the genito-urinary organs. The anatomical order of the two previous editions have been abandoned and the contents divided into two parts. Part I deals with the diseases of the urinary organs, including gonorrhea, while in Part II the diseases of the genital organs are considered.

In Part I, following the introductory chapters on malformations of the urethra, catheters and catheterization, wounds and foreign bodies, and urethra chill, the diseases of the urinary apparatus are taken up in anatomical order, beginning with the inflammations of the urethra, followed by the prostate, bladder, ureters, and kidney.

In Part II the same order is followed, the diseases of the penis being first considered, followed by disease of the scrotum, testicle, vas deferens and spermatic cord, and seminal vesicles. The final chapter considers maladies involving the genital function.

The work, while giving the views of the most eminent authorities in this field of surgery, naturally reflects the views and practice of the authors. And this is its great charm. The style is personal, pointed, easy, and the treatment is always practical. The reader is never at a loss to know exactly what the authors mean.

The subject-matter is based upon vast experience both in clinical work and in teaching, and therefore possesses a directness and a freedom from indefiniteness which is refreshing.

Not all will agree with the authors' views upon several points. We are glad to see that in the treatment of acute urethritis the irrigation method is advocated. This method, in the experience of the authors as well as others, gives by far the best results. But we do not believe the "most effective performance of this method" is secured by the two-way nozzle nor that this renders the method more cleanly. And not all will follow the suggestion of using a catheter for irrigating the posterior urethra. It is much more simple, just as effective, and quite as free from objection to raise the level of the irrigation solution and irrigate the posterior urethra with the same apparatus.

The question of the "cure of gonorrhea" is an important one, and is given the consideration which its importance demands.

The method suggested by the authors for determining this point is practical and in the present state of our knowledge quite satisfactory. If every

practitioner who is called upon to treat these cases would adopt the principles here laid down, they would revolutionize the attitude of the general profession toward this common disease.

In the treatment of stricture we are glad to see so much emphasis placed on dilatation. It illustrates the strong tendency toward restricting the cutting operation, which has been too commonly employed in relieving simple strictures. We are sorry the woven-silk filiforms with steel "followers" have not found greater favor with the authors in dilatating tight strictures.

The authors have adopted a conservative attitude in the treatment of prostatic hypertrophy and catheterization of the ureters. It would have pleased us more to have seen greater emphasis laid on early diagnosis and hence early operative interference. This result can come only through the general practitioner into whose hands these cases first fall.

We are very much surprised to find the indications for cystoscopic examination restricted to (1) to decide questions of operation in tuberculosis of the bladder, (2) ureteral catheterization, (3) tumor, and (4) obscure cases for diagnosis.

It seems to us the cystoscope gives us data of the greatest importance in cases of prostatic hypertrophy. One is not justified in operating on the prostate without the possession of the accurate data which can be obtained only by cystoscopic examination, and in the majority of cases instead of being "harmful" it is a simple procedure.

In the text there are typographical errors which a more careful proofreading would have eliminated.

We believe the book will continue to be popular with both students and general practitioners. It is undoubtedly one of the best books we have treating of this important subject.

A Text-Book Upon the Pathogenic Bacteria. For Students of Medicine and Physicians. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Philadelphia Hospital and to the Medico-Chirurgical Hospital, Philadelphia. Fourth edition, rewritten and enlarged. Handsome octavo volume of 629 pages, fully illustrated, a number in colors. Cloth, $3.50 net. Philadelphia, New York and London: W. B. Saunders & Co.; Baltimore: Medical & Standard Book Co., 3 W. Saratoga street. 1903.

The fourth edition of this work is so far superior to the previous edition that it may be considered a new book. The entire subject-matter has been revised and rewritten. It deals exclusively with the pathogenic bacteria, their relation to disease, and the alterations produced by them. The chapter on infection and immunity is brought thoroughly up to date, and presents in a clear and concise manner the intricate problems associated with them. We find a large number of references to bacteriological literature, and the bibliographic index is quite extensive. The book is divided into two parts. Part I deals with general considerations; Part II with specific diseases and their bacteria. Under the latter diphtheria and typhoid are especially well treated.

We gladly recommend the work to physicians and students. H.

MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

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BALTIMORE, NOVEMBER, 1903

THE TUBERCULOSIS EXPOSITION.

THE Tuberculosis Commisson of Maryland proposes to open in the early part of the new year a Tuberculosis Exposition. The project has been under consideration for several months, and seems likely to be realized upon a scale which will fully justify its ambitious title.

The Commission was organized under an act of assembly in 1902 for the purpose of studying the prevalence of tuberculosis in Maryland, its causes, its effects upon the social and economic welfare of the State, and the means by which its progress may be restricted.

The exposition is intended primarily to display the more striking results of the investigations of the Commission, and these should before everything else arrest the attention of thoughtful Marylanders. Beyond this the purpose of the exposition will be to show how the vast and complex problem of tuberculosis has been attacked by those who have been moved to undertake its solution ahead of us in Maryland.

If all those who are engaged in a large way and with measurable success upon the problem of tuberculosis should contribute, we might expect a bewildering show. In its way it would be a focus of the times, for tuberculosis, more than other diseases within the scope of preventive medicine, has made a powerful appeal to the popular mind and has excited the most intense and varied activities. It is hardly possible that the people of Maryland can grasp the length and breadth of the movement against tuberculosis even if the Commission should be able to display its dimensions, but the bare idea of its magnitude will be helpful, and this can hardly be missed by the most casual visitor at the exposition. If the people of Maryland can see the subject in a fairly true perspective, and can realize their responsibility and their need of the very ablest leadership, the results of the exposition should satisfy its projectors.

The next general assembly will be very likely to do something toward the restriction of tuberculosis. If the work of the Commission is as impressive as we may expect, extensive operations may be undertaken. There is more danger of a bad start than of no beginning. Some of the approved methods of controlling the disease will demand of legislators very careful consideration on account of their cost, and at the same time may excite so much popular favor by reason of their appeal to humane instincts that simpler, less costly and just as necessary steps may be omitted. One would not attempt to restrain either the enthusiasm of the public or the liberality of the legislature except to make sure that our movement shall begin at the beginning.

The exposition will try to show as fully as possible all the phases of the subject which are of interest from the viewpoint of prevention. The prevalence and mortality of tuberculosis will be shown in relation to population, age, sex, habits, race, occupation, and environment. There will be an exhibit of the pathology of the disease sufficiently extensive and varied to repay the interest of medical men, and arranged so as to be intelligible to the non-medical visitor. All the devices for disposing of sputa will be shown, and all the means employed for the restriction of indiscriminate spitting. Whatever is done by boards of health, dispensaries, charity workers to enlighten the people concerning the avoidance of infection will be shown. There will be a large exhibit of the requisites for outdoor life and of the contrivances which bring more or less of the advantages of outdoor life within reach of dwellers in towns and cities. The special tuberculosis sanatoria and dispensaries will be illustrated by photographs and architects' drawings. These will occupy a large amount of wall space, and may, perhaps, be the most impressive single feature of the exposition. A collection of photographs will show conditions actually existing in the especial haunts of tuberculosis in large cities. All the printed matter used by municipal boards of health in connection with tuberculosis will be conveniently arranged for examination.

A loan collection of books on tuberculosis will be on exhibition. The Maryland Commission will illustrate its methods of investigation by showing all the various inquiry and record blanks. These cover the mortality records of the disease, morbidity so far as that is ascertainable from the notifications and the laboratory examinations, and from a census of tuberculosis which the Commission will undertake in November. The studies of the Commission include also the relations of tuberculosis to housing, occupation, habits, race, heredity, poverty, child-bearing, and school life. The economic influence of the disease, both public and private, has been studied, and while the very nature of the inquiry restricts the amount of information collectible, the results are nevertheless reliable as far as they go.

Arrangements are being made to have visitors personally conducted through the exposition by men who are familiar with its various phases and able to give a clear and interesting account of what is shown.

Daily during the exposition lectures will be given by men of authority on the subject. The exposition will continue for one week.

A MEDICO-THEOLOGICAL COMMISSION ON EUTHANASIA.

The daily papers report that a post-prandial orator gave the New York State Medical Association a startling sensation on the recent occasion of its annual banquet. The speaker proposed the creation by law of a commission on euthanasia, to be composed of clergymen and physicians, whose duty it shall be to receive and consider applications from persons desiring to die, and to issue permits to such as are found to deserve the boon of death. The orator said: "When the prolongation of life is simply the prolongation of hopeless agony it seems to me that it would be proper that such a patient should quietly, decently, and modestly be allowed to end the sufferings. It seems to me that such a course would be a step forward in civilization and a step further away from barbarism."

It is beyond belief that a man went to dinner with such a thought in his insides, and no ordinary food or drink "gets on one's nerves" in this fashion. There may have been something in the salad, but, if so, it is fortunate that no one else had receptors for such atrocious mully-grubs. Perhaps the gentleman was invited there to talk, and on that account forbore to eat. Some orators keep themselves fit by such rigorous methods, but it is on the whole better to be disqualified.

While the speaker's suggestion is not novel, its appearance in banquet talk is most unusual, and it comes very strangely in this instance from a clergyman, the Rev. Marie St. C. Wright. The reverend gentleman's conception of mercy has a pallid resemblance to that of the Finns, Lapps, and Eskimos, who practice what Mr. Wright preaches. The faith of these simple people has, however, a respectable hardihood which can hardly be arrived at by way of civilization. Among sophisticated peoples identical ideas have appeared over and over, and have even gained some prevalence in the past when civilizations had grown sufficiently decayed.

To dotards and to babes much may be forgiven, but, coming from a man-who-is, the proposition to extinguish the fag-ends of human life by means of a medico-theological receivership calls for some sort of judgment. It may be true that modern theology is sundered from religion far enough to permit respectable clergymen to engage in humane murder; at any rate, we cannot dispute this point with Rev. Mr. Wright. But the very few medical men who are available for service upon the euthanasia commission still belong, unfortunately, to the criminal classes. Medicine is enthralled by certain old ideas, and interprets the Sixth Commandment literally. For its purpose of subduing pain and postponing death medicine may estimate an amount of pain as outweighing the value of life, and upon that estimate may put a life at risk. Many lives have gone out upon that hazard, but, in spite of all that modern science and ultra-modern religion have done to free us from ancient superstition, the medical mind has never consented to kill or to connive at killing for the cure of pain. "I boast nothing, but plainly say we all labor against our own cure, for death is the cure of all diseases." When a wornout spirit makes its own release, then we are doubly defeated.

Time was when the uses of pain were praised by Christian ministers. Nowadays, although its praise is less, physicians know that the usefulness of pain has more and more increased as its significance has become better and better understood; but the more we learn of pain the less we know of that "hopeless agony" which occurred to Mr. Wright while dining. Excessive dining, with other civilizing influences, may at last produce a race of men who will dishonor every debt of nature, but surely the men of our day, if they cannot avoid pain, want to go to a finish with it. Neither you nor I, my friend, dare say what pain will do to us before we are out. Our observations are, on the whole, encouraging. What we have seen of the mastery of pain has been good to see. When life has been more terrible than death we have sometimes loaned our fortitude, or seen virtues better than our own supplied by those who minister in the name of Christ. But we have also seen good mettle cankered until nothing amiable remained of the man who was. If you should see the approach of that in me, my friend, keep those about me who can lend me grace and defend me from myself till I have paid the last item on the scroll.

Medical Items.

Smallpox is again on the increase in Philadelphia.

Dr. H. M. Alexander, the well-known propagator of vaccine, died at his home in Conewago, Pa., on October 13, aged fifty-two years.

St. Paul, Minn., claims a death-rate of 9.2. Which of the Ten Commandments is too well observed in St. Paul?

The newly-elected officers of the Section of Clinical Medicine and Surgery of the Medical and Chirurgical Faculty are Dr. John D. Blake, chairman, and Dr. W. E. Magruder, secretary.

The State Board of Health of Indiana has, it is said, passed an order forbidding the re-engagement of 250 public-school teachers who have tuberculosis. The intention was to hit the nail on the head, not to smash a thumb.

The American Public Health Association met in Washington, October 26 to 30, under the presidency of Surgeon-General Walter A. Wyman of the United States Public Health and Marine Hospital Service. Havana was selected as the place of meeting in 1904.

A special St. Luke's Day service for physicians was held on Sunday, the 18th of October, in Calvary Protestant Episcopal Church, New York city. Dr. D. B. St. John Roosa read the first lesson, and Dr. Wm. H. Thomson made an address. Bishop Potter also made a brief address.

The Pennsylvania Society for the Prevention of Tuberculosis has made new plans to educate the public concerning the hygiene of tuberculosis. The society will try to reach the public by posting regulations and instructions upon billboards and street poles and by regularly publishing short articles in the newspapers.

The Department of Charities of New York city has attempted to bring the advantages of the Blackwell's Island Tuberculosis Hospital within reach of women who are prevented by household duties from residing at the hospital. Mr. Folks has instituted a plan of day treatment by which these women receive open air and good food, with needed medicines, during the day and return to their homes at night.

It is a remarkable and an encouraging thing that the record of the Health Department of New York city furnishes a large part of the campaign material by which the present administration seeks to be continued. A story recently told shows that the Department of Health occupies a prominent place in the minds of the citizens. It is said that a burglar alarm in a building in a 10th-street block, between Broadway and University Place, began to ring at 9 o'clock one night and clanged away without apparent reason till after 1 o'clock. The building was empty and the police were unable to stop the row. A sleepless resident of the vicinity called up the residence of Dr. Lederle on West 143d street and reported the disturbance. In twenty-six minutes an officer of the Health Department reached the gong and made an end of its clamor.

At the Twenty-ninth Annual Session of the Mississippi Valley Medical Association, held at Memphis October 7, 8, 9, the following resolutions were adopted:

"In view of the fact that more than 400 deaths from tetanus occurred following the Fourth of July celebration of 1903, as shown by the statistical report elaborated by Dr. S. C. Stanton of Chicago and published in the *Journal of the American Medical Association* of August 29, 1903, the great majority of which might have been prevented had proper precautions been taken; therefore, be it

"*Resolved,* That the conclusions which follow, as offered by Dr. Stanton in a paper presented before the association at the above meeting, be endorsed as the sense of the association: (1) Enforcement of existing laws regarding the sale of toy pistols and other dangerous toys; (2) Enactment of laws by the nation, States, and municipalities prohibiting the manufacture and sale of toy pistols, blank cartridges, dynamite canes and caps, cannon crackers, etc.; (3) Open treatment of all wounds, however insignificant, in which, from the nature or environment, there is any risk of tetanus; (4) Immediate use of tetanus antitoxin in all cases of Fourth of July wounds or wounds received in barnyards, gardens or other places where tetanus infection is likely to occur; (5) As a forlorn hope the injection of tetanus antitoxin after tetanus symptoms have appeared."

THE Conference of State and Provincial Boards of Health of North America met in Baltimore at the hall of the Medical and Chirurgical Faculty on October 23 and 24. There were present Dr. Conn of New Hampshire, Dr. C. A. Lindsley of Connecticut, Dr. Gardner T. Swarts of Rhode Island, Dr. Henry D. Holton of Vermont, Dr. Henry Mitchell of New Jersey, Drs. Lee and Embrich of Pennsylvania, Drs. Lowber and Cooper of Delaware, Drs. Wm. H. Welch and J. S. Fulton of Maryland, Drs. Nolte and Thomas of Louisiana, Drs. Carlos Finley and John Guiteras of Cuba, Dr. C. O. Probst of Ohio, Dr. J. A. Eagan of Illinois, Dr. J. N. Hurty of Indiana, Mr. Frank Wells and Dr. Cressy Wilbur of Michigan, Dr. U. O. B. Wingate of Wisconsin, Dr. H. M. Bracken of Minnesota, Dr. McCormick of Kentucky, Dr. Towne of Nebraska. Dr. Eugene F. Cordell, president of the Faculty, made a brief address of welcome; Dr. Wm. H. Welch, president of the State Board of Health of Maryland, also made an address of welcome. The president of the Conference, Dr. Irving A. Watson, was detained in New Hampshire by reason of a fresh outbreak of foot-and-mouth disease. The vice-president, Dr. John Guiteras, took the chair. At the first session Dr. J. H. Mason Knox and Mr. Edwin G. Schorer of Baltimore presented the subject of infantile diarrhea. A lively discussion followed. At the afternoon session Dr. Henry D. Holton of Vermont spoke upon "The Restriction of Venereal Diseases," and Dr. John Guiteras of Hanava upon "Another Year's Experience in the Control of Yellow Fever in Cuba." Both these subjects received spirited and interesting discussions. At the second morning session the rules governing transportation of dead bodies were revised. Dr. Cressy L. Wilbur of Michigan reported for the committee on uniform methods of mortality registration. Dr. J. S. Fulton of Maryland gave an outline sketch of the organization and methods of the Maryland Tuberculosis Commission. The following officers were elected: Dr. John N. Hurty of Indiana, president; Dr. John S. Fulton of Maryland, vice-president; Dr. Gardner T. Swarts of Rhode Island, secretary; Dr. J. A. Eagan of Illinois, treasurer. Committees were appointed, one to prepare and submit plans for informing the public upon the venereal diseases, and the other to establish standards of efficiency for embalming fluids.

DR. CHARLES WELLS MOULTON announces a dozen books in lighter vein under the title of "The Doctor's Recreation Series." The separate titles are as follows:

Volume I—"The Doctor's Leisure Hour." Facts and fancies of interest to the doctor and his patient. Arranged by Porter Davies, M.D.

Volume II—"The Doctor's Red Lamp." A book of short stories concerning the doctor's daily life. Selected by Charles Wells Moulton.

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TETANUS.

By A. Aldridge Matthews, M.D.,
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Hippocrates described this disease at length. He said: "Such persons as are seized with tetanus die within four days, or, if they pass these, they recover." Areteus defines tetanus as a "spasm of excessively painful nature, swift to prove fatal, and not easy to be removed." "The physician," he says, "has no power over the disease; he can merely sympathize."

Although tetanus is a disease which has been known almost for time immemorial, and has been studied more or less by scientific men of all ages, it was not until 1884 that the specific bacillus was discovered by Nicolaier.

This disease may occur at any age or in either sex, but is more common in the male than the female, and the reason of this probably is that the former is thrown more in the way of the infection.

Tetanus may be defined as an acute infection which is caused by the entrance and growth of the specific organism, the bacillus of tetanus.

There are many different varieties reported and described, and have received various names, such as Tetanus traumaticus, Tetanus cephalicus, Tetanus neonatorium, and so on, but they are all the same in origin, differing only in place of infection, and the symptoms may progress in a little different manner.

The bacillus is a long, slender rod, in the end of which a spore forms, distending the cell into a drumstick shape. It is one of the most marked types of anaerobic bacteria. It grows outside of the body, and is especially associated with stables and manured fields. Sheep and cattle are often affected. The disease is most common among agricultural laborers, gardeners, and soldiers on campaign. The points of infection are most commonly about the feet and hands, sometimes following operations where proper technique has not been carried out.

Infections of this character have been reported to follow the use of a hypodermic needle, and even from a bee sting, but, of course, such an origin must be exceedingly uncommon. It more frequently

follows penetrating wounds, the bacillus or spore being carried in and the air excluded, thus making the conditions most favorable for its development.

To demonstrate the prevalence of the bacillus in rich garden earth this experiment has been done many times: Under the skin of a white rat or mouse a minute particle of garden earth is inserted, and the disease in due time nearly always follows.

Autopsies on tetanus patients by competent and trained observers are so infrequent that not much opportunity has been given for the study of the minute structural changes.

Goldscheider and Flant, in studying the spinal cord of tetanized rabbits, constantly found certain characteristic changes in the motor cells of the anterior horn, which, in the order of their development, depend upon the concentration and virulence of the toxins injected and upon the duration of the infection. These changes are readily recognized by Nissl's method of staining, and show primarily an enlargement of the nucleus, which at the same time becomes more indistinct; then there follows an enlargement and disintegration of Nissl's granules, with an enlargement of all the nerve cells.

It is claimed by some authors that in all cases of experimental tetanus there is a so-called local tetanus, a contraction of the muscles in that part of the body where the infection gains entrance. This is not the case in human tetanus—at least has never been noticed.

The hypothesis of nerve conduction of tetanus poison is without solid foundation. There is one constant means of conduction for the tetanus poison, and that is the circulation. In all animal experiments the blood has always been found to have the specific toxic properties of tetanus. The hypothesis of nerve conduction is consistent with the theory of Gomprecht that there are two methods of dissemination of the toxins—one along the peripheral nerves of the spinal cord, causing the so-called local tetanus, followed at a shorter or longer interval by general tetanus, due to infection of the central nervous system through the general circulation. In cases where the intoxication is but a mild one the entire process may be limited to the local tetanus.

It has also been found by Shutzen and others that the toxic power of the cerebro-spinal fluid is greater than that of the blood. If the presumption be a correct one, then the tetanus toxins are brought to the subarachnoidal space and spinal cord by means of the perineural and endoneural lymph channels and so exert their toxic influence. This explains the occurrence of local tetanus. It is possible that the poison comes in so slowly and is taken up at once by the nearest cells of the anterior horn because of their specific affinity for the poison before it has time to become diffused, and in this manner produces at first the local tetanus. *The organism itself does not circulate in the blood.* The tetanus bacillus produces toxins at the seat of infection. These toxins get partly into the circulation and may become active through this channel. As a rule, however, the toxins are carried along the nearest nerve, presumably through the

perineurium and endoneurium of the nerve cord. On reaching the subarachnoidal space of the cord they produce in animals their toxic action at first at the point of entrance into the cord, and so cause the local tetanus. If sufficient poison is brought to the spinal cord, it produces next a regional, and finally a general tetanus.

Most frequently in man the spasms are produced without any definite order, perhaps because the toxins are diffused rapidly through the comparatively large and loose subarachnoidal space. The point of attack for the toxins is certainly the motor ganglia cells of the anterior horn, which are brought to a state of increased irritability.

The prognosis depends upon the period of incubation and the rapidity of development of the symptoms.

Moschowitz collected 290 cases treated by subcutaneous injection of antitoxin, of which 173 recovered and 117 died, a mortality of 40.33 per cent., and 48 cases treated by intracerebral injection, of which 23 recovered and 25 died, a mortality of 52.08 per cent.

There is no definite rule about the severity of cases. The attack may begin after a few hours to a few days—say one or two days. These are the most severe cases, and practically always fatal. After a patient goes eight or ten days and then the symptoms begin, they are usually mild, progressing slowly and disappearing in the same way. But if the symptoms progress rapidly it is a bad omen, even though a week or more has passed since infection.

Cases have been known to develop as late as eight weeks after the infection, but these are very uncommon, and it would not be surprising if many such cases should be treated as neuralgia or what not, for in this form only a certain muscle or group of muscles is affected.

Up to within the last decade the treatment of tetanus has been purely symptomatic and the mortality about 90 per cent. This percentage has been greatly reduced by the antitoxin treatment. It is now about 40 per cent.

The first thing one should do is to try to destroy the bacteria at the seat of infection and prevent further production of the toxins, as in the great majority of cases the bacillus remains at the seat of infection. The wound should be thoroughly cleansed and exposed to the air by freely opening it and removing all foreign bodies. The next step is to disinfect the part by soaking it in a bichloride solution, 1-1000.

The toxins should be eliminated from the body as much as possible by cathartics, diuretics, and diaphoretics, the latter not often necessary, for the patients usually sweat profusely.

The antitoxin is essential and it should be given very early, for it causes the unaffected nerve cells to acquire an immunity. The nerve cells which have been affected by the toxin will not be restored by antitoxin.

Roux and Borrell infected forty-five guinea-pigs with tetanus, and subsequently treated them by trephining and injecting the antitoxin directly into the brain, and succeeded in saving thirty-five,

while out of seven others treated by subcutaneous injection only two survived, and of seventeen animals, used as control animals and receiving no treatment, all died. Antitoxin has also been injected into the spinal cord, but the results are very poor. The amount of antitoxin recommended to be used by injection into the frontal lobes of a human being is 3 c. c. This should be done very slowly and with great care.

Our first aim should be to remove all factors that tend to provoke spasms, and this is done by placing the patient in a quiet, secluded room where there will not be any noise or any unnecessary moving about. Another measure not to be underrated, as it is by some authors, is the use of anodynes and of such remedies as have a tendency to reduce reflex irritability, the opiates, bromides, and chloral in full doses.

June 12, 1902, T. J. S. of Maryland, age thirty-seven years, white, male, married, a physician, entered the hospital with a history of having been operated upon for some rectal trouble five days earlier. Forty-eight hours ago (three days after the operation) he complained of a little stiffness in the jaw and the muscles of the neck. Being a physician himself, he became very much worried, although he continued to do his work for twelve hours longer, after which he determined to come to the hospital.

He arrived about 10 A. M. with his wife and a friend. He could not swallow without considerable pain. The teeth could not be separated more than about one-quarter of an inch, and from time to time he had convulsive seizures, in which his teeth were clinched and his head drawn back. He had been taking morphia and chloral with little effect. Any noise or the laying of one's hand upon the patient would cause one of the convulsive seizures to come on.

The following orders were given: Three-hour chart; keep room dark; liquid nourishment, ℥ iv, every three hours, to be taken through a straw (not a glass tube); calomel, gr. ¼, every three hours until two grains had been taken; follow in six hours with magnesia sulphate, ℥ ss, every three hours; chloral, gr. xx, with potassium bromide, gr. xxv, every two hours. A hypodermic of one grain of codeia sulphate was given, which caused him to sleep, but when he awakened the spasmodic contraction returned.

The rigidity of his muscles seemed to be confined to the cervical region and the masseter group.

One thousand units of antitetanic serum were given at 11 A. M., and this dose was repeated at 4 P. M., and at 9 P. M. 500 units were given.

At 2.30 A. M. on June 13 another 1000 units and ½ gr. morphia. The morphia was repeated at 3.30 A. M. and again at 5 A. M. At 9 A. M. another 1000 units and ½ gr. morphia were given.

The patient took his nourishment fairly well.

The convulsions seemed to become more frequent and more severe as time went on.

At 2 P. M. 1000 units of antitoxin were given, and repeated the dose at 6 P. M., at 10 P. M., and at 4 A. M. on the 14th.

The convulsions became very much severer from 8 P. M. on, and his pulse began to fail. He could no longer swallow, and the attempt to do so would bring on a convulsion. The convulsions became very much worse. He would be thrown into ophisthotomos position, and then fall over on his side, the arch of his back being very marked. About one hour before death his temperature rose rapidly to 105° F.

This patient received every twenty-four hours chloral, gr. ccxl; potassium bromide, gr. cccxx, and also morphia and codeia in large doses, with little or no effect.

The full amount of antitoxin given in the two days was 7500 units.

William Morris, aged twenty-three years, a laborer, was admitted on July 18, complaining of stiffness about the lower jaw and neck. The neck was slightly retracted, the posterior spinal muscles being very rigid. He is unable to straighten his back sufficiently to lie comfortably on the bed. The mouth cannot be opened over one-eighth of an inch. There is great difficulty in swallowing, due partly to the retracted neck. He was sweating profusely all over; the body is very hot and moist; pulse 115 to minute, and seems normal in force and rythm; respiration was slightly accelerated and labored. He made ineffectual attempts to cough.

Present trouble dates back to July 10, 1903, when patient, while working in a brickyard, stepped on a tenpenny nail in a board. The nail was new and free from rust. He was wearing shoes and stockings at the time the wound was inflicted. The nail penetrated the sole of the right foot, near the great toe, about three-fourths of an inch. A slight plug of pus formed in the wound, but this soon disappeared without causing much soreness. Nothing has been done for it save the application of some proprietary salve. He worked every day until the morning of the 17th. On July 17, 1903 (seven days following the injury), while at breakfast, he noticed a slight stiffness in his lower jaw and back of neck, which he at the time attributed to a slight cold.

On July 18 his swallowing became difficult, and at night he was unable to swallow anything.

When he sleeps the muscles of the jaw are apparently relaxed, allowing the tongue to protrude through the teeth. Upon awaking the tetanic spasm reasserts itself. Occasionally slight convulsive movements are seen in the upper extremities, very transient in duration. Both knee-jerks are exaggerated. He does not seem nervous. Wound was thoroughly opened up and washed out with bichloride solution (1-1000). He was given antitetanic serum, 10 c. c., every five hours hypodermically, and by the mouth bromide potassium, gr. l, and chloral, gr. xv, every two hours.

On July 19 he had two convulsions in the morning, each lasting about half a minute. Respiration was suspended during convulsions, and the body was generally cyanotic.

Rigidity in lower jaw and neck less marked; swallowing less difficult; temperature steadily rising—102 4-5° on admission, ris-

ing to 104° at 3 P. M., 105 4-5° at 12 midnight; urine was voided involuntarily. The pulse began to grow weaker and more rapid. About 5 P. M. respiration became accelerated and superficial. Chloral was discontinued at 9 P. M.; temperature 105 4-5°, pulse 180, and respiration 44. Chest over right lower lobe shows diminished resonance and very harsh breathing—a suspicion of a beginning pneumonia; heart extremely weak. Two doses of digitalin, gr. 1-50, were ordered at a two-hour interval. He had no true convulsions in the afternoon, but when disturbed showed convulsive movements of extremities. Nourishment was taken through the nose. The bowels were moved freely by calomel and salts. Patient delirious at times; reflex absent at 12 midnight; pupils contracted; did not sweat much during day.

July 20, 5 A. M.—Patient almost pulseless; respiration very high; convulsive movements very marked; temperature 105 3-5° per rectum; morphia, gr. ¼, hypodermically, followed by cessation of movements; breathing over both lungs very feeble.

Urine showed albumen, hyaline, and granular casts. He died at 8.30 A. M. on the 20th. Convulsions frequent, and rise of temperature to 107.8° F. preceded death.

INFECTIOUS DISEASES FROM A PUBLIC HEALTH STANDPOINT.

By C. Hampson Jones, M.D.,
Assistant Commissioner of Health, Baltimore.

ADDRESS TO THE HOMOEOPATHIC MEDICAL SOCIETY OF MARYLAND.

I ASSURE you that I highly appreciate the honor of being invited to address your honorable body, though I confess some hesitation in accepting the invitation to address an association whose members are fully aware of the needs of Baltimore city. It would be difficult to present a clear and comprehensive statement concerning our chief hygienic needs without going further into details than an occasion of this kind permits, but I am sure that a health officer ought not to lose an opportunity to speak on a subject of such vital interest, more especially when his audience is composed of physicians, each one of whom comes into intimate professional relations with hundreds of other citizens, many of whom are suffering with preventable diseases.

Since the establishment of the theory that the cause of disease of infectious or contagious character was to be found in a living organism, sanitarians have been able to direct their efforts better than in former years, when such diseases seemed to be due to some subtle influence, invisible, stealthy, manifesting its power with steadily-increasing force, striking terror even to the stoutest hearts as the arrows of death struck nearer and nearer. Today the sanitarian

knows that each of the infectious diseases has as its cause a something that is material and endowed with life, something that he can attack directly by agents that will destroy its life, and by means that will prevent its being carried about among the people. Today we look after the people both sick and well, and do not make curious observations about the atmosphere.

The history of government in all civilized countries shows that it is necessary in each community to place in the hands of one man or set of men extraordinary power over the persons and property of citizens in order to protect and promote the public health. In the United States we have the Public Health and Marine Hospital Service, now in charge of Surgeon-General Wyman, which has as its duty not only the care of the health of the seafaring men of merchant vessels flying our flag, but also the protection of the country from invasion by infectious diseases. Assisting in this work are quarantine services maintained by cities and States. Our State has, in addition to this, the State Board of Health, and all the twenty-three counties have their local health officers. The city of Baltimore has its commisioner of health, with two assistants and twenty-four health wardens. All this array of departments and officers of health is maintained by the people for the purpose of protecting and improving the public health, and this means for the most part to fight infectious diseases.

Now, we find that the health of cities is judged usually by the death-rate. While this standard is not always just, yet the general public knows no other. Every death that occurs in Baltimore is recorded in the Health Department, and a careful record is made of the causes of death. The clerks of the department at the end of the year tabulate and draw comparisons with former years as far back as 1875. Of late years the department has been distributing copies of the annual report not only to other cities and States, but also to the citizens of Baltimore, and especially to the medical profession. How many of these reports are read? How many citizens read the epitomes published in our daily press? How many of those who do read them really and seriously think about what has been said and done by the Department of Health? Have you always tried to support and assist the department? The department needs your aid in protecting your health, in lessening the death-rate, in making our city greater. Have you noted the large number of deaths due to infectious diseases—diseases that are preventable?

Suppose we consider first of all the deaths due to diseases which everyone believes to be infectious. In the year 1902 there were 1821 deaths due to such causes, or 17 per cent. of the total 10,253 deaths. These 1821 deaths were due to the following causes: Diphtheria, 130; scarlet fever, 37; typhoid fever, 220; measles, 41; whooping-cough, 95; mumps, 1; consumption, 1297. If, now, we add to these deaths those due to pneumonia, 1010; broncho-pneumonia, 255; summer complaint, 741, we have the grand total of 3827 deaths, or 37.32 per cent. of the total deaths from all causes during the year caused by communicable diseases. Some there are

who do not believe that pneumonia, broncho-pneumonia, and summer complaint are infectious, and others who say that though infectious they are not preventable. Of course, I cannot enter into a discussion of this point, but in part answer I have to say health officers know full well that many cases of pneumonia and broncho-pneumonia are primarily due to tuberculosis, measles, and whooping-cough, and by lessening these three diseases we confidently expect to lessen the number of deaths due to pneumonia. The recent work done under the Rockefeller endowment is leading us to look to infcted water and milk for the cause or causes of summer complaint, so that we will soon catalogue this as an infectious or preventable disease. You can readily appreciate how much ought to be done toward lessening the death-rate of our city from these diseases. No one for a moment believes that all of these preventable diseases will be prevented. But suppose, instead of preventing 37.32 per cent. of the total deaths, that we prevent only 1 per cent. That would save every year 102 lives. Can you calculate the value of those lives? I can't. Can we save that many? Yes, and many more. Look what has been done in diphtheria. From 1898 to 1902, inclusive, there were 7856 cases of diphtheria reported; of these, 1304 died. According to studies made by Dr. Welch, in the years previous to the use of antitoxin not less than 40 per cent. of diphtheria cases died. So we should have had, according to his figures, not less than 3142 deaths—a saving of 1838 lives. Besides these, one should consider the number of cases of diphtheria prevented by immunizing, by placarding, by fumigation, by guarding the public schools, etc. Their number we cannot estimate accurately.

Let us examine for a moment the typhoid-fever record. From 1875 to 1902, inclusive, the number of deaths varied from 144 in the lowest to 367 in the highest year. The total number of deaths due to this fever is 5232, or an average of 187 deaths per year. According to careful observers, the average percentage death-rate of typhoid fever is 10; the lowest percentage is 6, and the highest 20. Taking 10 per cent., then, as our guide, we have on an average about 1900 cases of typhoid fever every year. We know that this disease is preventable, and that in cities it is conveyed almost exclusively by water and milk, the latter being infected by the former.

Again, let us consider the record of tuberculosis. As to the number of cases now in Baltimore we have no definite knowledge; we must depend on the death records for partial information. The deaths, however, inform us only of a minimum number, because, as I have said, many deaths really due to tuberculosis are attributed to pneumonia. I have at hand the records of the years since 1893—1894-1902, inclusive. In these nine years there were 10,078 deaths from tuberculosis—an average of about 1120 each year.

Let us examine the scarlet-fever record. This record of deaths is very curious and interesting. Commencing in 1875 with 519 deaths, we have as the years follow, in order, 562, 447, 141, 80, 400, 215, 179, 134, and 104, giving an average per year of 298 deaths. Now, beginning with 1885 and continuing up to 1903, we find that

in no year, except in 1891 and 1892, was the number of deaths over 85. The record is as follows (beginning with 1885): 68, 32, 36, 44, 71, 42, 128, 258, 36, 85, 59, 31, 53, 46, 24, 20, 11, and 37, making an average per year for the last eighteen years of about 60. As I do not know what the mortality was previous to 1875, it would not be safe to draw any conclusions from these irregular figures, but it is certainly worthy of note that the marked fall in the number of deaths occurred near the time when medical men began to grasp the idea that infectious diseases were due to living organisms, and began to take special care to disinfect the body as well as the clothing of the sick.

Last of all, let us consider measles. I call your attention to this disease because the popular belief still lingers that measles is an unimportant disease of childhood. From 1875 to 1902, inclusive, there were 1926 deaths from measles—an average of about 69 per year. But remember that this does not include deaths charged to broncho-pneumonia which were primarily due to measles.

I will not weary you with further details. I have surely shown that our death-rate receives very large contributions by diseases that are preventable. We, as physicians, must not cease to warn the people of these facts, and to assure them that their protection must come from their own hands. We should above all other things teach people that they have no right to expect better protection than they themselves afford to others.

Like a composite photograph, the character of a community depends upon the predominance of certain features. If you should meet a tiger in an Indian jungle, you know what to expect, but when you meet a strange man in the city you don't know what to expect. Men are in general better disguised than tigers, and sometimes more dangerous. High and low, rich and poor, Jew and Gentile, native and foreign, black and white, all contribute to the composite character of such a population as ours. Among its features but one often seems predominant, a feature that at times is so strong that all others are shadowed—selfishness. It is this that prevents the building of a hospital for infectious diseases; it is this that delays the construction of a system of sewers; it is this that condemns to waste many a life that is of incalculable value. Infectious diseases are not to be stamped out by the edicts of the Department of Health, but they can be stamped out with the intelligent assistance of unselfish citizens. The report of "smallpox gives people the horrors. The Health Department can have everything it needs —a quarantine hospital, a detention hospital, and even general vaccination." Why? Because smallpox hurts trade. Not because smallpox kills many people, for surely if that consideration were a real motive the people would do something against other and more deadly diseases. Look at the record from 1875 to 1902, inclusive—1209 deaths occurred from smallpox. Of these, 1184 died in the two years 1882 and 1883, leaving only 25 deaths to be distributed over the other twenty-six years, and of these 25 deaths, 11 occurred

in 1881 and 7 in 1902. Yet the people approved the spending of much money, and rightly so. During the same time, however, diphtheria killed 10,707, scarlet fever 4062, typhoid fever 5232, measles 1926, making a total of 21,897. Add to this number the 28,000 deaths due to tuberculosis and we have a grand total of 49,897 deaths, or an average of 1782 per year. This loss of life can certainly be lessened, but it will continue undiminished until the people are willing to make sacrifices in order to establish, first, a hospital for infectious diseases; second, protection and purification of our water; third, a perfect sewerage system; fourth, a strict supervision of our milk supply; fifth, proper care of cases of tuberculosis, and sixth, the education of the people in the habitual practice of the golden rule.

The Relative Importance to the Community of Pneumonia and Tuberculosis.

Dr. Arnold C. Klebs read a paper on this subject before the Chicago Medical Society November 11, in which he drew the following conclusions: (1) That the relative economic importance of pneumonia and tuberculosis cannot be estimated by a mere comparison of total mortality figures for each disease. (2) That the high mortality figure, and its increase of late, for pneumonia is produced by the enormous death-rate, and its increase, attributed to this disease in early childhood. (3) That, therefore, the high mortality from pneumonia, and to a certain extent its increase, is due to a classification of different ill-defined pathologic conditions under one name, while that from tuberculosis represents that of a well-defined morbid entity. (4) That for this reason, and on account of the relative shortness of disabling sickness and frequent recovery in pneumonia, the great length of disabling sickness and infrequent recovery in tuberculosis, the relative importance of the two diseases is so vastly different that a comparison on economic grounds reveals the overpowering danger from tuberculosis. (5) That the steady decrease of the tuberculosis death-rate can be explained on the grounds of increasing improvement of hygienic conditions in late years and as the result of specific prophylactic measures. (6) That the increase of the pneumonia death-rate, occurring in a time of improving hygienic and sanitary conditions and of a general application of antiseptic principles, shows its independence of these features. (7) That, therefore, and in view of the still enormous mortality from tuberculosis, its demonstrated preventability and the possibility of its arrest only in its earliest stages, the institution of educational measures in regard to personal and public hygiene, widely and specifically applied for the prevention of this disease, seems to be distinctly indicated. (8) That since for pneumonia, as pointed out by E. F. Wells, "the fundamental information on which prophylactic rules may be formulated is not yet at hand," this subject needs further investigation, from a bacteriological and epidemiological standpoint as well, before "exaggerated and irrational notions in regard to its dangers and its avoidance" are communicated to the public, which, in view of the facts given, are out of all proportion.

Current Literature.

SURGERY.

Under the Supervision of Hugh H. Young, M.D., Baltimore, Assisted by J. W. Churchman, M.D.

Observations on the Evolution of Abdominal Surgery, from Personal Reminiscences Extending Over a Third of a Century and the Performance of Two Thousand Operations. A. W. Mayo Robson, F.R.C.S. *The British Medical Journal*, August 1, 1903.

The Address in Surgery, read before the seventy-first annual meeting of the British Medical Association by one of the masters of the art, would be valuable enough a contribution to contemporary medical literature if the ability of its author, the personal tenor of his words, and the timeliness of his subject were the only attractive features of the paper. Abdominal surgery, however, offers to Americans not only the intense interest which, as the center of *all* surgery, it brings also to others, but a distinctly *national* interest besides; for here, if anywhere, American names stand prominent. One thinks naturally of Fitz, McBurney, Sands, and Senn in connection with the history of appendicitis; of Murphy, Halstead, and Senn in connection with intestinal anastomosis; of the Mayos in connection with surgery of the bile passages. Dr. Robson's summary of the past thirty years in surgery is, therefore, of value as recording the observations of one who has been active in surgery during one of its most active periods; who has taken a part in its development, and knows full well what the past has of value to the future. Americans will be interested also to see the prominent part their country has played during this epoch, particularly in the development of intestinal surgery.

Thirty years ago, when hospitals were ravaged with gangrene and phagedena, when erysipelas was not long absent from any surgical ward, when secondary hemorrhage was common, and tuberculosis a diathesis, abdominal diseases were practically always treated expectantly, and surgery had no business inside the abdomen. In 1870 an attempt was made, following the example of Sir Spencer Wells and others, to change this state of affairs, and at St. Bartholomew's that year three ovariotomies were done—all fatal—and nineteen herniotomies, with nine deaths. Guy's, St. George's, and St. Thomas' had similar experiences. In one of the reports for this year (1870) fifty-three cases of erysipelas, twenty of phagedena, and ninety-three of diffuse cellulitis were recorded.

The progress of abdominal surgery has centered largely around ovariotomy. McDowell of Kentucky was probably the first one to perform a complete and successful ovariotomy, though the opera-

tion had been thought of before—in 1731 by Williams of Basle, and later by Hunter—and was indeed performed almost simultaneously by Houston of Glasgow. The operation was an unpopular one, and was condemned absolutely by the medical papers of the day, which is not to be wondered at when we consider that in 1870 the mortality from this procedure in general hospitals was no less than 81 per cent. Thanks, however, to the progressive work of Spencer Wells, Keith, and others, good technique gradually proved its worth, appearing first as antisepsis and later (partly because of the crusade against it under the acrimonious leadership of Lawson Yait) becoming the more rational asepsis. So that today, excluding accidents from pneumonia, embolism, etc., no patient should be lost from an ordinary ovariotomy well performed.

In the seventies, and even much later, the final and sufficient diagnosis of "peritonitis" used to be made with much satisfaction, though undoubtedly many abdominal conditions went by that name; and all treatment of the disease was directed to the administration of "antiphlogistics" and other absurd members of the pharmacopeia. The development of the past thirty years has taught us, however, that peritonitis is nothing more nor less than a definite infection, and the result is that perforating gastric ulcer, visceral ruptures, penetrating wounds of the abdomen, appendicitis, typhoid perforation, and other conditions causing a localized or a general infection of the peritoneum are catastrophes which call for no other treatment than prompt and aseptic surgical interference.

The great reduction in mortality in gall-bladder surgery during the past thirty years is due to an earlier diagnosis, a closer study of the pathology of the disease, and infinitely greater care in operative technique. The diagnosis is now an easy one, for the symptoms are classic. The first real step in the study of the pathogenesis was made when Bernheim in 1886 showed the relation between typhoid fever and cholecystitis; and when Galippe demonstrated the bacterial origin of gallstones he paved the way for our present view that in bacterial infection of low virulence we have explained the etiology of cholelithiasis. The first cholecystotomy was done by Bobbs of Indianapolis in 1867. In Dr. Robson's first series of choledochotomies his mortality was 23.8 per cent.; in his last series 1.5 per cent.

Surgery of the stomach began with great failures and had to work its way through great opposition. When gastrotomy was first done by Sedillot it was nearly always fatal, but out of Dr. Robson's last twenty-four cases only one has died. When Péan first attempted to remove a malignant pylorus and Billroth first succeeded in doing it the operation was looked on with as much disfavor as the first gastrectomy by Connor of America, yet both operations have now a good and well-earned surgical standing. So of gastroenterostomy, which in 1878 showed a mortality of 36.4 per cent., in 1902 a mortality of only 3.8 per cent. Gastric ulcer has ceased to be an affection demanding only medical treatment, and here, too, the surgery of the past thirty years has very great triumphs to record.

Every abdominal organ has indeed profited by the recent surgical advances. Intestinal anastomosis, Cesarean section, herniotomy, hysterectomy for myoma, operation for tuberculous peritonitis and for chronic pancreatitis, partial hepatotomy, operative interference in ectopic gestation, nephrotomy, nephrectomy, ureterotomy and ureteral anastomosis, renal decapsulation—these are the more important of the surgical procedures which since 1870 have not only been originated, developed and made of practical value, but have actually succeeded in saving hundreds of patients otherwise hopelessly condemned, in rescuing from invalidism many others, and, as in the case of herniotomy, in removing a very disagreeable and dangerous condition with so small a risk that it may, in a world notoriously uncertain, be nearly, if not quite, neglected.

* * *

Intestinal Localization: A Study on the Cadaver for the Purpose of Determining to What Extent the Various Parts of the Intestine May Be Identified Through an Abdominal Wound. George H. Monks, M.D. *Annals of Surgery*, October, 1903.

There may well be some question whether, even if this experimental study had been ideally successful—which it manifestly was not—the results would have had enough surgical value to warrant us in considering them a real contribution to abdominal surgery. In most abdominal operations, as the author himself remarks, information as to the approximate position of an intestinal loop in reference to the rest of the intestine, or a knowledge of the direction of the loop, is of no real value to the surgeon, and we think he may have overestimated the importance of such information in the more directly intestinal procedures of enterostomy, anastomosis, etc. Certain it is that the occasions are rare when a surgeon is embarrassed as to his procedure by inability to localize a loop of gut, and he has at his hand, in extreme cases, the simple—but with care and good technique the safe—method of systematic search of the intestines. However, Dr. Monks has done an interesting bit of work and has emphasized certain anatomical features which are doubtless of value and may have some surgical importance.

The experiments were made on about forty cadavers, and various abdominal incisions were used. Through each wound an intestinal loop was pulled out, its characteristics noted, its position and direction estimated, and the loop marked by an identification tag and dropped back into the abdomen. Of these estimations and characteristics a careful record was kept. About 4 per cent. of the localizations were made correctly, but 54 per cent. showed an error of from one to four feet, 75 per cent. being made with an error under three feet. In 91 per cent. the direction of the loop was correctly estimated. The characteristics of the intestines

by which Dr. Monks was able to recognize any given portion of the small bowel with this degree of accuracy he sums up as follows: 1. We may form some idea of the localization of a loop by its position in the abdominal cavity. Draw a line on the abdomen directly over the mesenteric attachment and at each end of this line two others perpendicular to it. The cavity is thus divided into an upper, middle, and lower partition, in which the upper, middle, and lower thirds of the gut, respectively, lie. 2. The diameter of the gut is greatest above and diminishes as we go down. 3. The intestinal wall is thickest above, and becomes thinner below, though in the last two or three feet it again becomes somewhat thicker. 4. Vascularity is most marked in the upper portions, and lower down the tube gradually fades out to a grey or pinkish grey. 5. The valvulae conniventes are largest and most numerous above, and can seldom be found fourteen or fifteen feet from the duodenum. 6. The consistency of the intestinal contents increases somewhat as the lower portions are reached. 7. Near the duodenum and in the ileo-cecal region the surgeon may become "orientirt" by gently pulling on the bowel and noticing some resistance from the more fixed portion. 8. Mesenteric vascularity changes in the different portions of the intestinal course. High up the vessels are largest and the vascular loops are entirely primary; below the vessels become smaller and their arrangement gradually more complex. The vasa recta, which in the upper portions measure from 3 to 5 cm., become, lower down, shorter, smaller, and less regular. 9. The thinnest part of the mesentery is adjacent to the upper part of the intestine, and so opposite the thickest portion of the tube. 10. In the lower third of the bowel little tubs of fat project from the mesentery toward the bowel. 11. By stretching the mesenteric root and noticing whether the resistance inclines to the left or to the right we get a fairly good idea of the proximity of the loop to the duodenum or the ileo-cecal valve. 12. The mesenteric root, again, divides the abdominal cavity into a right and a left fossa. If by stretching the mesentery we can identify its sides, it is a comparatively easy matter to identify the sides of the adjacent bowel, and in this way the direction of the loop.

The conclusions which Dr. Monks has reached are not very satisfying. The author is himself "somewhat uncertain" as to the usefulness of these experiments in operations on the living subject. In cases, as he himself says, where there is danger of spreading contamination, anything like a thorough examination of the deeper parts of the mesentery would not be justifiable. However, Dr. Monks has given us an article that is at least not hackneyed in its subject or content. The experiments have been painstaking, the observations valuable, and the spirit of the work commendable in its attempt to enter a little-known field.

PATHOLOGY AND BACTERIOLOGY.

Under the Supervision of José L. Hirsh, M.D., Baltimore.

Tuberculosis of the Uterus and Adnexa. James Targett. *British Medical Journal,* October 17, 1903; *Journal American Medical Association,* November 7, 1903.

Targett shows the frequency of this condition in the statistics of various hospitals. In many cases tuberculosis is not diagnosed, and the naked-eye changes are often so slight as to be overlooked. The Fallopian tubes are the points of attack in nearly 90 per cent. of cases, and in them it may take on one of three forms—diffuse miliary tuberculous salpingitis, caseous tuberculous salpingitis, and tuberculous pyosalpinx. The peculiar features of tubercular pyosalpinx are its elongated banana-like shape, the persistence of the fimbriated extremity, the absence of adhesions on its serous surface, and the comparative thinness of the sac wall. The contents are usually free from pyogenic organisms, and often do not contain tubercle bacilli. The uterine extremity will, however, be found thickened and have the characteristic structure of tubercular growths. Tuberculosis of the body of the uterus he finds remarkably similar to the condition in the tube. We have thus a caseous tubercular perimetritis, a diffuse miliary form and the true pyometrium. In the majority of the cases the uterus is infected by extension of the disease from the tubes, rarely from the cervix. He considers primary corporeal tuberculosis dubious, though it has been attributed to placental infection. Pregnancy seems to favor the development of tubercular peritonitis. Some writers have laid stress on the nodular feel of the diseased tubes, such nodules often being in close relation to the uterus, and may justify the suspicion of tubercle, though malignant disease would have to be excluded. When disease affects the uterine cavity it may be possible to detect the tubercle bacilli in the discharges or discover the structure of tubercle on microscopic examination of the uterine scrapings.

* * *

The Experimental Production of Uncompensated Heart Disease, with Especial Reference to the Pathology of Dropsy. Charles Bolton. *Journal of Pathology and Bacteriology,* Vol. IX, No. 1.

The present paper is concerned only with the experimental facts relating to the blood-pressure in the arteries, veins, and capillaries which have been found to occur in animals the subject of uncomplicated heart disease.

At present there are three theories with regard to the primary factors concerned in the pathology of the dropsy of venous stagnation: 1. A secretory theory, according to which the endothelial cells of the capillaries are supposed to have a specific secretory function, and that in dropsy this function is very much increased. 2. A theory which maintains that malnutrition of the tissues and accumula-

tion of the waste products are the most important factors in determining the production of edema, and that a minor part is played by the blood-vessels. 3. A mechanical and physical theory, according to which the dropsy depends upon increased venous and capillary pressure, together with an altered condition of the vessel wall, filtration and osmosis playing a most important part in it.

The important point, therefore, to be settled is whether there is a general rise of venous pressure in cardiac dropsy or a rise in the large veins of the trunk only and a fall in the more peripheral parts of the venous circulation, and also whether this pressure remains high whilst dropsy is being produced.

The principle adopted in these experiments is to interfere with the diastolic filling of the heart. The method used consisted in the constriction of the pericardium by means of sutures, so that the free expansion of the chambers of the heart during diastole is prevented and the blood accumulates in the venous system.

The author divides these experiments into three groups:

1. Those in which the pericardium is constricted and the animal allowed to recover in order to determine whether dropsy results.

2. Those in which the pericardium is constricted and the result upon the arterial and venous pressure noted, the animal being killed at the conclusion of the experiment.

3. Those in which the subsequent changes, if any, in the arterial and venous pressures whilst dropsy is being produced are observed.

The first group of experiments were performed on four cats, the animals being etherized. In all dropsy resulted, accompanied with diminished amount of urine and dyspnea—the clinical picture of uncompensated heart disease. It was also evident from these experiments that in the absence of any special effect of gravity upon the circulation (the animals being in the supine position) the dropsy of heart disease first manifests itself in the serous cavities and in the mediastinum.

The second group of experiments were conducted on eight animals. To sum up shortly, the results upon the arterial, venous, and capillary pressures obtained demonstrate that when the heart fails to maintain its normal systolic output there is a fall of arterial pressure and a rise of pressure throughout the whole venous system; that soon the venous pressure falls to its normal level, probably owing to the distension of the veins, and that, finally, there is a low arterial pressure, a normal venous pressure, and a low capillary pressure, except in the liver, where the capillary pressure is normal. It follows from this that the blood flows with a diminished velocity through the capillaries.

In the experiments of Group 3 the arterial and venous pressures were taken before the pericardium was constricted and the changes noted during the operation. The animals were allowed to recover and the blood-pressures were taken subsequently, when dropsy had commenced to appear. These experiments show that the fall of arterial pressure which occurs during the constriction of the pericardium is, to a large extent, recovered from, but that when edema

occurs the arterial pressure has a lower range than normal. The venous pressure, which has been previously shown to rise during the constriction of the pericardium and subsequently fall to normal again, still remains at its normal level.

The experiments of Bolton differ from those of Cohnheim in the fact that the latter, by injecting oil into the pericardial cavity, produced a condition more nearly allied to hemorrhage into the pericardium or to a pericardial effusion, which is a gradual process, neither of which, however, is comparable to an uncompensated heart lesion. The author claims the method of constriction employed in this investigation is almost exactly parallel with those cases of adherent pericardium which gives the clinical picture of uncompensated heart disease.

Cohnheim's conclusions that venous pressure was high and maintained its height was wrong, because his method of experiment was not comparable to uncompensated heart disease. In fact, the high venous pressure is only temporary, and is soon followed by a normal venous pressure and a low capillary pressure.

Granted the existence of a low capillary pressure and a diminished velocity of the blood stream, the writer concludes that more probably passive edema is primarily due to impairment or other alteration in the capillary wall, especially as some distension of the veins occurs, than that it is due to excessive secretion of the capillary endothelial cells or to the needs of the tissues primarily.

* * *

HEMOCHROMATOSIS, WITH DIABETES MELLITUS. James M. Beattie. *Journal of Pathology and Bacteriology,* Vol. IX, No. 1.

Beattie describes in some detail the alterations found at autopsy in a case presenting the condition known as hemochromatosis. His conclusions are as follows:

1. The condition known as hemochromatosis is a distinct entity, and the diabetes associated with it is but a late manifestation, due to a very considerable destruction of the cells of the pancreas and an increase of fibrous tissue. The degenerations in the islands of Langerhaus may have a very important *rôle* in the production of the diabetes.

2. The degeneration in the cells of the liver, pancreas and other organs, and the cirrhosis, in part, are due to a toxic agent possibly derived from the intestine by way of the portal circulation.

3. The pigmentation is due partly to the degenerated cells not being able to perform their metabolic processes properly and partly to transportation from the liver and pancreas.

4. The cirrhosis is due mainly to the toxic agent causing the cell degeneration, but may be due in part to the irritation caused by the pigment.

HYALINE BODIES IN TUMORS AND KINDRED OTHER CONDITIONS. Randle C. Rosenberger. *American Medicine,* November 7, 1903.

Numerous observers have described certain peculiar bodies in malignant tumors. Gaylord has observed an organism in certain tumors which is said to have produced adenomas when inoculated into the lower animals. Loeb has reproduced sarcomas by inoculation. Russel, Plimmer, Busse, and others have isolated bodies from tumors and other conditions. The writer has also demonstrated certain bodies in malignant and benign tumors and kindred other conditions. These bodies are found in the juice of tumors, as well as deeply situated in the stroma, or among, and sometimes within, the cells of the tumor. These bodies in the unstained condition are spheric, hyaline, non-granular, and refractile; some appeared to be encapsulated, but most of them were non-encapsulated. They are light yellow and yellowish-green, and unaffected when treated with osmic acid, Sudaniii or ether. They lacked the heavy outlines of fat globules. They stained in the fresh condition with eosin and gentian violet. No budding was demonstrable. The size of the bodies varied from 5 to 20 microns in diameter. In malignant growths these bodies have been observed with wonderful regularity. In fifty-seven malignant tumors examined the bodies have been observed in all but one. Some contained many, others only a few. They were more frequently seen in carcinomas than in sarcomas. They were also demonstrable in a case of intracannicular fibroadenoma of the breast, in adenoids, and hemorrhagic pancreatitis. When possible inoculations were made from the tumors upon various culture media.. The results were negative.

In conclusion, the author notes that these bodies were observed with great regularity. They were in most cases situated deeply in the tissues, while a great many were seen intracellular. Some of them gave quite a typical reaction of amyloid material, while the greater number failed to give this reaction. He thinks that they correspond more closely to the fuchsin bodies of Russell, and that they really represent some degenerative changes occurring in the cell or cell nucleus. That they play some part in the etiology of the conditions in which they are found seems doubtful, notwithstanding the fact that they are found deeply situated and intracellular. They do not possess the peculiar intracellular characteristics which Plimmer's bodies do, being distinctly hyaline. They may, however, represent a hyaline or amyloid degeneration of blastomycetes. The fact that cultures were not obtainable in any case upon various media, and the failure to demonstrate true budding, seems almost positive proof that they were not blastomycetes.

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THE TRANSMISSION OF BOVINE TUBERCULOSIS BY MILK, WITH A TABULATION OF EIGHTY-SIX CASES. George M. Kober. *American Journal of the Medical Sciences,* October, 1903.

The writer has tabulated eighty-six cases of milk bovine tuberculosis, and quite a large number of cases of transmission of bovine

tuberculosis to man have been reported by Krauss, Ravenel, and others. New light has also been shed upon the extent of intestinal infection by the statistics of Heller, who finds that in 714 autopsies in children who died from diphtheria, 140 were tuberculous, and of these 31 per cent. showed primary lesions in the intestines or mesenteric glands. The statistical work of Gottstein shows that the mortality from tuberculosis in breast-fed children is but slightly more than half as much as among those otherwise nourished, the proportion being as 6 : 10. The vital statistics of various States show a tremendous increase of tuberculosis during the milk-drinking age over that of later life.

A review of the cases of milk-borne cases of tuberculosis, when taken in conjunction with the laboratory experiments and the general evidence, justifies the following conclusions:

1. Tuberculosis may be transmitted to man in milk from tuberculous cows. The danger from this source is real and cannot be measured by the actual number of recorded cases, but should be judged, in part at least, by the inoculation and feeding experiments and the accidental-wound infections which have established the intercommunicability of bovine and human tuberculosis.

2. The degree of danger may also be estimated by the prevalence of bovine tuberculosis and of the forms other than phthisis-pulmonalis in man, remembering that the infectious qualities of milk are greatest when the udder is the seat of lesions, and that Gebhardt's experiments have shown that tuberculous milk when diluted with the milk of sound animals in the proportion of 1 to 40 lost its infective power.

3. The experimental studies also indicate that while the bacilli of human tuberculosis possess different degrees of pathogenic power, and are often of feeble virulence for cattle, Koch's assumption that human and bovine tuberculosis are distinct and that human tuberculosis cannot be conveyed to cattle appears to be disproved, and his failure to secure similar results may be attributed to the use of human bacilli of diminished virulence.

4. Recent investigations have strengthened Smith's claim that there are two types of tubercle bacilli—the so-called bovine, and human types, possessing certain morphological and biological differences; but it has also been shown that virulent cultures may be obtained from both of these types, which, when inoculated into animals, produce the disease in question.

5. Future research seems desirable with a view of determining the frequency of primary intestinal and abdominal tuberculosis in all cases which come to autopsy, whether the child perished from tuberculosis or not, and in these autopsies the bacteriological examination should be directed to the existence of the two types of the tubercle bacilli originally referred to by Smith, and whether the bovine type predominates in the so-called scrofulous lesions.

6. Careful chemical examination of the milk of tuberculous animals should be made with a view to determining the amount of

phosphoric acid as compared with the quantity in normal milk, since it appears probable from De Schweinitz's biochemical researches that the excess noted by the older chemists is really the result of bacterial activity in the udder of the cow.

7. In the meantime the pathologist has no occasion to reverse his opinion as to the identity of human and bovine tuberculosis, and the sanitarian has no reason to assume that the human subject is immune against infection with the bovine bacilli or is so slightly susceptible as to cause him to relax his efforts in preventive measures.

REVIEW IN NEUROLOGY.

Unaer the Supervision of Robert Reuling, M.D., Baltimore.

A Case of Diabetic Intravascular Lipemia in Which the Blood Was Examined During Life. W. Lale White. *The Lancet,* Vol. II, No. 15, 1903.

The author apparently gives Heyl the credit of having published the first case of intravascular lipemia in diabetes in 1880. He also finds that very few authors mention the condition, and Naunyn in his work of diabetes does not refer to it. A few cases have been reported—three in England and one in Germany. So-called "lipemia" occurs in other conditions—alcoholism, phosphorus poisoning, pneumonia, peritonitis, and gout. Most authors say that under the microscope fat globules may be seen and also very fine granules. In many cases undoubted fat granules are present that stain with osmic acid, but a finely-granular precipitate, evidently not of an oily nature, is also seen; and as Futcher found that the turbidity of the blood was only in part cleared with ether, and many granules were not stained black by osmic acid, he suggests that the granules are particles of fat surrounded by an albuminous envelope. A careful microscopic examination in White's case failed to show any fat globules or anything that stained with osmic acid. A chemical analysis suggested the presence of a proteid precipitated by the presence of a fatty substance, but what proteid was present was not ascertained. The fatty substance was not true fat, but apparently an ester of cholesterin with one of the higher fatty acids or a mixture of them. The ophthalmoscopic appearance in White's case are clearly shown in a chromolithograph which accompanies the article. The retinal arteries and veins contain blood of a similar color, and this color is a deep cream, which in the larger vessels passes into a pale salmon color. The vessels appear a little larger than usual; the whole retina is pale. Most cases of diabetic lipemia have been fatal, and it has been suggested that the lipemia is the cause of the coma.

The patient, a man aged twenty-six years, was admitted to Guy's Hospital. He complained of hunger, thirst, polyuria, weakness, and wasting. The weakness was noticed first nine months previous.

For a time he did well and gained weight. On admission he was drowsy. His breath smelt very sweet, and he had a sweet taste in his mouth. Tongue red. The amount of sugar voided in the urine was 2595 grains in twenty-four hours. The total quantity was 178 fluid ounces; specific gravity 1040. One part per 1000 of albumen and 770 grains of urea were present. Well-marked ferric chloride reaction. Under treatment sugar fell to between 1000 and 1500 grains in twenty-four hours; daily secretion of urea between 600 and 900 grains. The ferric-chloride reaction was present during entire stay in hospital—over three months. Total ammonia 2.565 grams, pointing to the presence of a large amount of oxybutyric acid. As the patient improved the color of the retinal vessels and fundus improved markedly, and was quite natural in two months. He gained twenty-three pounds.

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A Lecture on Syringal Hemorrhage Into the Spinal Cord. Wm. R. Gowers. *The Lancet,* Vol. II, No. 15, 1903.

Gowers almost in beginning the article lays stress on the importance of the caput cornu posterioris in the formation of cavities and hemorrhagic conditions of the cord, for in the process of normal development this mass of embryonal tissue becomes isolated and remains unchanged. He says: "All the developmental cavities occur in the posterior and central regions of the cord—a fact that is intelligible, since this region is the last to attain structural completeness. But such cavities when dilated may compress and damage the anterior horns, with muscular atrophy as the result, and even the lateral columns of the cord, causing spastic paralysis of the legs." Schultze maintains that similar cavities in the cord sometimes result from hemorrhage, and suggests that their origin may be minute hemorrhages in the gray matter caused by difficult birth. From the embryonal cells of the caput cornu posterioris we find a great number of malignant neoplasms have their origin, especially glioma. With certain embryonal malformations in the cord itself other visible developmental defects are found, especially spina bifida, and here the author describes an obscure case in which, after careful search, a spina bifida occulta, which consisted in a scar "at the bottom of the dorsal spine—something like the umbilicus, but with furrows running from it for a short distance right and left. On this were a few large hairs—a very suspicious indication." That hemorrhage may easily occur into these pre-existing cavities is evident if we consider they are frequently irregular in position and in size, and therefore in the relation to vessels. Moreover, if gliomatous tissue forms it is vascular, and the residual embryonal tissue which surrounds it seems to be readily broken down by fluids. Gowers describes a very instructive case in a medical man in which well-marked cerebral symptoms to a great extent obscured what no doubt was a vascular lesion in the dorsal or cervical regions of the spinal cord. The man was forty years old, development sudden, complete paralysis of the left arm, preceded by some pain in right

side of head, and objective vertigo. There was complete anesthesia of this arm. As the facial and leg muscles showed no disturbance in their innervation, Gowers says: "A cerebral lesion never causes complete paralysis of the arm without affection of the face or leg. The structures are in such contiguity that absolute destruction of the center for the arm or the path for the arm cannot occur with such implication of the adjacent regions for the face or leg as to cause impairment of their function—at any rate for a time. Moreover, in cerebral paralysis of the arm the muscles of the shoulder girdle are never completely paralyzed. In this case the affection of these muscles was remarkable. The patient had a congenital defect of certain movements of the eyes. They were habitually directed to the left, and could not be moved at all to the right of the middle line. Such a condition lifelong means a congenital defect of structure in the upper part of the pores on the left side. I have not seen the patient since, but learned lately that after two years the power gradually began to return, and that he has since regained fair power over all parts of the arm. He is otherwise in excellent health. But there has not been wanting evidence of the accuracy of the diagnosis of syringomyelia, with vascular lesion. This patient, after the paralysis, had increasing trouble at the hip joint. He was operated on, and the head of the femur was found twice its normal size and sawed off. The edges of cetabulum was also thickened (arthropathy). Patient made a good recovery and since acquired a useful joint."

* * *

Advances in the Treatment of Paralytic Deformities. A H. Tubby. *The Lancet,* Vol. I, No. 13, 1903.

The author gives the following varieties of paralytic deformities: (1) Those arising from anterior poliomyelitis; (2) those due to infantile spastic paralysis, infantile hemiplegia, and cerebral diplegia; and (3) those due to injuries of the nerves, such as the Erb-Duchenne type of palsy, affecting the upper root of the brachial plexus, or lesions arising from crushing or severance of nerve trunks. He dwells on the remarkable selective tendency for certain groups of muscles, individual muscles, or even part of a muscle, in a certain number of cases of anterio-poliomyelitis; also the fact that in any given case it is impossible to foretell the extent to which recovery will take place; and one is continually surprised from time to time by seeing an apparently hopeless limb resume under treatment all, or nearly all, its functions. The operation of the form of tendon-grafting to be preferred originated with Nicoladoni in 1882. A large number of cases are recorded. Vulpius gives his experience in six cases. The *rationale* of the operation is, first of all, to utilize what is ill-directed voluntary movement, and, secondly, to restore the balance of muscle so far as possible in the affected part. But it will be evident that the joint can never be a strong one, since the amount of power at the disposal of the surgeon has been diminished by disease.

Various Methods of Tendon-Transplantation.—These are numerous and are constantly added to by surgeons. The principal methods used are represented in the article by a diagram from the article of Vulpius. In instances where the tendon will not reach to the point of its intended insertion, a bridge of silk or gut can be used with apparently fair success. Jochner has succeeded in bridging a gap of two and one-half inches in the extensor communis digitorum by a similar method. The author is probably right in thinking that cerebration, or its probable absence, at least for a period, plays any part in an improved state of affairs after the operation, for cerebration and muscle-balance seem to adapt themselves quickly to the changed conditions. It may be of interest to review briefly the most common pathological conditions due to the paralysis of certain muscles and means the author advises for their correction.

Talipes calcaneo-valgus can be treated by the insertion of the peroneus longus into the inner side of the tendo Achillis.

Talipes calcaneo-varus is treated by the insertion of the flexor longus digitorum into the outer side of the tendo Achillis, uniting the distal part of the cut flexor longus digitorum with the flexor pollicis.

Talipes equino-valgus is treated by splitting the tendo Achillis and the gastrocnemius up as far as the junction of the two heads of the latter and then inserting the inner portion of muscle and tendon into the tibialis posticus, or, better still, bringing it well forward and fixing it on the under aspect of the scaphoid bone. This relieves the valgus portion of the deformity. The equinus portion is readily rectified by section of the remaining half of the tendon of Achilles.

Talipes valgus may be treated by transplanting the proximal part of the peroneus brevis into the tibialis anticus above the ankle joint, and, if necessary, tenotomizing the peroneus longus.

In extensor curis paralysis the sartorius can be divided just above its insertion and inserted into the top of the patella. If the sartorius is defective, the semi-membranosus can be taken from the inner side of the joint and a portion of the biceps from the outer side of joint and both inserted into the top of the patella.

Paralytic conditions of the wrist lend themselves especially well to tendon-muscle transplantation, but the author's remarks on this subject are not included in this review.

* * *

Successful Intraneural Infiltration of the Median and Ulnar Nerve During an Operation for Dupuytren's Contraction of the Fingers. W. W. Keen. *American Medicine,* Vol. VI, No. 18.

The author reports the following case showing the value of neural infiltration with cocaine in which general anesthesia would have been dangerous. Anesthesia was absolute and lasted one hour:

Miss B., aged sixty-two years. For the last twelve years has had

attacks of pain and stiffness involving the left shoulder, her knee, and finger joints. A distinct cardiac murmur is present with the first sound of heart, due to former attacks of rheumatism or gout, and she has gouty eczema. Feeble beyond her years, and very nervous.

About six years ago, without known cause, a small lump formed on the palmer aspect of the left hand, involving the middle and ring fingers. After three or four years contraction of the fingers began. Eight months ago the flexion extended to the second joints, and now the tips of the fingers are almost buried in the palm of the hand. Her little fingers have been flexed for years, but there is no cord in the palm. Corresponding to middle and ring fingers are two marked cords in the palm.

Urine is turbid; amber; 1.015° acid; a faint trace of albumen; no sugar; urea 1 to 6 per cent.; no casts found.

Operation.—The tissues over the median and ulnar nerves at the wrist were first infiltrated, and in a few minutes the two nerves were exposed and 15 to 20 drops of a 1 per cent. cocaine solution injected into each nerve. In a few minutes two incisions were made in the palm—one from the first interphalangeal joint beyond the knuckle of the middle finger nearly up to the wrist in the line of the cord; a similar incision was made corresponding to the ring finger. The two contracted cords of the palmar fascia were then exposed by dissection and excised. The operation, on account of careful dissection required, lasted fifty minutes.

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THE VALUE OF TETANUS ANTITOXIN. B. Mollers. *Deutsche med. Wochenschrift*, November 28, 1902.

The author reports four cases of tetanus treated with antitoxin. Only one showed temporary improvement following the inoculation; all died. But as Behring has emphasized the fact that the initial inoculation should not occur later than thirty-six hours after onset of the first tetanic symptom or suggestive symptom, a sufficient amount of serum should be used. In Mollers' case large amounts of serum were inoculated within thirty hours following the onset of symptoms, yet all terminated fatally. All were apparently severe cases. The author seems to realize the far greater usefulness of preventive inoculation in cases where there is a reasonable possibility of the onset of tetanus existing. Animal experimentation has shown that preventive or coincident serum inoculation is usually effectual, but in treatment of the disease in man too much time has generally elapsed between the infection and the serum inoculation to permit of the latter being of avail. In such cases the nerve cells are already so damaged by the toxins that the nerve centers are beyond repair. He strongly urges the prophylactic use of the serum.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

SECTION IN CLINICAL MEDICINE AND SURGERY.

MEETING HELD FRIDAY, OCTOBER 16, 1903.

John D. Blake, M.D., was elected president; Dr. Magruder, secretary, and Dr. John Rührah, member of the executive committee for the ensuing year.

Sarcoma of the Nasal Septum—Exhibition of Case and Pathological Specimen.—Dr. R. H. Johnston.—The patient is a woman, aged seventy. Her mother died at seventy-eight of an abdominal tumor which was diagnosed a cyst and had originated two years previously. One sister died from a growth in the left side of the neck.

The patient has lived an active life as a nurse since 1861. Her health has been good since childhood until two years ago, when she had an attack of pneumonia. In December, while nursing, she contracted a "cold in the head." Home remedies were applied without effect, and in February a swelling appeared on the left shoulder, followed by involvement of the preauricular glands. At this time her physician found a nasal obstruction, but the glands were diagnosed as tuberculous.

Three weeks ago the patient came to the Presbyterian Hospital of this city. The left side of the nose was swollen, the preauricular and cervical glands were enlarged, as well as those above the clavicle. The patient complained of complete nasal obstruction and asthmatic attacks, but there was no pain or hemorrhage. Examination showed a deviation of the septum on the right side, with complete obstruction of the nasal passage. On the left side there was a pink, hard, non-movable swelling which was attached to the septum, bled easily, and closed the nasal passage. Under the microscope the section of the tumor showed that it was largely cellular, with a little connective tissue, and the diagnosis of sarcoma was made. The tumor was inoperable, but portions of it were removed in order to increase the patient's breathing space. The opening, however, has closed as fast as made. The glands are continually growing and are becoming tender. Dyspnea and dysphagia are now present, and enlarged glands are palpable in the axilla. Sarcomata of the nose are rare, Kimmel being able to collect only sixty-nine cases in the literature. The inguinal glands in this case are not enlarged, but the patient complains of some abdominal tightness pointing possibly to involvement of the liver. The question was raised whether this case had any connection with Hodgkins' disease. Microscopically, the tumor is a lympho-sarcoma, and it is important to know whether the symptoms of nasal obstruction or the glandular enlargement appeared first. Dr. Johnston stated that the patient is certain the nasal obstruction appeared before the glandular swelling.

A Case of Creeping Eruption—Dr. Hamburger.—This disease was unrecorded in America until September, 1902. My patient was an imbecile boy four years of age. His history could not be obtained. Examination showed about the center of the buttock a linear eruption running vertically and about

1½ mm. wide. It was a pale red, raised, and surmounted by vesicles. The lower portion consisted of purplish-brown pigmentation surrounded with crusts. The lesion was migrating slowly, the line advancing about 6 cm. in twenty-four hours. A piece of skin just ahead of the growing end was excised. No parasite was found, but the line immediately faded, and has since disappeared. Dr. Lee of London showed a case of creeping eruption before the Clinical Society there in a child three years old. The line migrated four and one-half inches in twenty-four hours, taking a very irregular course from the leg across the back and abdomen. It was cured by excision. Crocker calls this disease larva migrans. Several cases of creeping eruption have been observed in Russia, where the disease appears most frequently in the dictum months, and shows a black point just ahead of the growth, which has been proven to be a larva similar to that of the fly. None but the Russian cases have shown larvae, though the symptoms of cases observed elsewhere point to a closely allied, if not identical, etiology.

The disease is prone to affect children, and involves generally the uncovered portions of the body, but often the buttock. In Russia the peasants seem to be most often affected. The characteristics are those of an advancing red line, with a pigmented area left behind. Vesicles are frequent, but pustules never occur. The duration varies from a few days to five weeks. In one of Crocker's cases it lasted two and one-half years. The serpigenous course and the absence of suppuration make the diagnosis. The treatment is excision of the piece of skin just ahead of the advancing lesion. The larvae of the bot-fly are parasitic to mammals, but the parasitism is limited to one species.

Myiasis, or infection with the larvae of flesh flies, is generally divided into two forms—the internal and external. The intestines, nose, eyes, urethra, and vagina may be affected by the disease. In external myiasis the bot-flies probably play a part, and the larvae of creeping eruptions belong probably to the bot-fly group. The symptoms of cutaneous myiasis seem to vary in different geographical regions. The points of interest in my case are, first, the dermatological features; second, the question of its relation to myiasis; third, the fact that it is only the second case described in this country.

Dr. Lord: I had in my clinic a case of creeping eruption in a Bohemian woman forty-five years old. The disease lasted from four to five weeks. No larvae could be found, and it was cured by excision.

The Bicêtre Hospital of Paris—Dr. Emerson.—The Bicêtre Hospital is an insane asylum and almshouse for men, as the Salpètrière is for women. It has a beautiful situation and an interesting history. It was founded in the thirteenth century by the Bishop of Winchester as a settlement on his estate. In 1657 Louis XIV established an asylum and almshouse for retired soldiers, lunatics, children of dissolute parents, and other unfortunates, and the hospital has since had great historical interest.

The first school for imbeciles was established here, and Pinel introduced humanitarian treatment at this hospital, and not at the Salpètrière, as is commonly supposed. Broca also had his training there. The hospital has about 3500 inmates, gathered from the poor, the insane, and the idiot children of Paris. The city spends on it about $400,000 a year. The treatment is good, and the poor of Paris desire to be admitted to the hospital. There is a splendid insane department, a fine school for idiot children under Borneville, and

the wealth of material for neurological students is tremendous. Marie has charge of these cases, and their number and value may be judged from a few statistics. The first case of ascending peripheral neuritis, now called syringomyelia, was reported from this clinic; so of the first case of double athetosis, now known to be chronic chorea. Here, too, are the original cases of cerebellar ataxia and syringo-myelia of the ataxic type. Marie while studying hemiplegia from the standpoint of the palatal reflex collected fifty right-handed cases and fifty left-handed cases, and in another investigation gathered together twenty cases of syringo-myelia, a disease considered a rarity elsewhere. The abundance of material may be further estimated from the fact that one autopsy is made a day, and only the nervous system of the subjects is examined. Marie actually finds more cases of combined sclerosis than he can follow.

Paris affords a splendid chance for one who knows just what he wants and needs material for study. This apparently is to be made more readily accessible to foreigners by the establishment there of good post-graduate courses.

THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

MEETING HELD OCTOBER 12, 1903.

Dr. Thomas B. Futcher was elected president, and Dr. C. P. Emerson, secretary, for the coming year.

Demonstration of Medical Cases.—Dr. McCrae showed the pathological specimens of a case which had had several admissions to the Johns Hopkins Hospital before death.

The patient was a colored man, forty-nine years of age, and was admitted complaining of shortness of breath. Three months before admission he had "caught cold," and was still suffering from cough and pains in the chest. Examination showed a lift of the manubrium and an area of dullness in the chest. A diagnosis of aortic aneurism was made.

On his second admission he showed the same symptoms, and examination revealed a large pulsating swelling reaching from the second to the fourth rib and far out to the right from the sternum. There was no pulsation or prominence to the left. Suddenly, however, the fulness one day disappeared from the right and appeared on the left. Ten days later the tumor again moved to the right, and the heart apex, which had moved far out toward the axilla, came in again toward the middle line. On the third admission the patient showed signs of adherent pericardium and of aneurism on the left side of the sternum. Shortly after his entrance to the hospital the tumor once more moved to the right, where it remained until death. The specimen from the case was that of an aneurism of the aortic arch one inch above the valve. The portion on the extreme right, which corresponded to the area where the pulsating tumor first suddenly appeared, was very thin. The pericardium and lungs were adherent. There was erosion of the trachea, a second small aneurism on the descending arch, and a general diffuse bronchiectosis of the left lung. The thinness of the right wall of the aneurismal sac may explain the peculiar change in the physical signs noted before death.

The shifting of the tumor, however, might also be explained by the relation which the aneurism bears to the heart, particularly when it is remembered that the heart apex shifted markedly during life. Pressure of the aneurism on a bronchus, with resulting changes in intrathoracic conditions, might also explain the phenomena. Death was due to rupture of the pericardium. *X*-ray photographs showed a shifting shadow corresponding to the change in the physical signs.

Demonstration of Surgical Cases—Dr. Follis.—The first patient was a woman, aged forty-five, and was brought to the hospital with a wound in the right lumbar region caused by a 38-caliber revolver. Her last meal had been taken four hours before admission, and she was seen two hours after the accident. Examination showed abdominal rigidity, normal temperature, and leucocytosis of 30,000. The abdomen was opened through the right rectus, and the cavity found full of bloody fluid and bowel contents. Eleven intestinal and six mesenteric perforations were found. Two in the cecum and two in the ileum were closed. The portion of gut containing the seven remaining perforations was excised, and the two bowel ends left in the abdominal wall. The patient reacted well, and her condition was good for two weeks, but, on account of her failing nutrition (due to the loss of fluid matter through the high fecal fistula), an extra peritoneal lateral anastomosis was done by the elastic-ligature method. Patient did well, and after six weeks the bowel ends were excised and turned in under cocaine.

The second case was a colored boy, aged ten years, who was admitted with typical signs of peritonitis and of typhoid fever, including a positive Widal. He was immediately explored, and an intestinal perforation found about 25 cm. above the ileo-cecal valve. The ends of the bowel were brought to the abdominal wall and left there. The patient had a post-operative pneumonia of the right side, developed a large abscess of the right thigh, subsequently suffered acute intestinal obstruction due to the omentum, and was sick with the measles for one month. The enterostomy wound was fully closed under cocaine, and the patient recovered completely. Enterostomy in general peritonitis, with distention, is not a new procedure, having been done by Doyen of Paris, and from one of the Vienna clinics we are told that a typhoid perforation should never be closed, but should be left as a natural avenue for drainage.

Dr. McCrae: Dr. Follis' second case teaches plainly that a typhoid patient should at least have the chance of an operation even when general peritonitis has fully developed. The statistics of this hospital show that about 33 per cent. of the cases recover with operation.

Ascending Renal Infection, with Special Reference to the Reflux of Urine from the Bladder Into the Ureter, as an Etiological Factor in Its Causation and Maintenance—Dr. Sampson.—In the radical operation for uterine cancer the question arises, what should be done with the ureter? And to answer this we must understand the pathology of kidney infections. There are three avenues of infection of the kidney. First—The blood-vessels. Experiments in dogs in which the ureter was ligated have shown that pyonephrosis may develop from the injection of staphylococci into the injured bladder, and hence a hematogenous ascending renal infection is a possibility. The anastomosis between the renal, uterine, ovarian, and vesical arteries offers also a chance for blood infection of the kidneys. Organisms may, in addition, enter

through the ureteral artery, which connects directly with the renal circulation. Second—The lymphatics. Dr. Sampson's experiments on this point were negative. Third—The lumen of the ureter. The anatomy of the intravesical portion of the ureter shows that its oblique course through the bladder wall and the prolongation of its anterior lip to form a valve offer in the distended bladder a natural obstacle to the back flow of urine. In a contracted bladder, however, the course of the ureter is less oblique, the ureteral valve is less prominent, and the prevention of reflux is due to a puckering of the bladder mucosa. The state of distention or contraction of the bladder changes the ureteral orifice and consequently the chance for a reflux of urine. My experiments and cystoscopic examinations have shown that the ureter undergoes contraction so long as fluid flows through it, and that the ureteral orifice draws back just after the expulsion of the urine stream into the bladder. Infection may reach the kidney via the ureter from the following causes: First—Injury to the ureteral orifice. I have had several clinical cases in which infection has probably taken place in this way. Second—By extension of the inflammatory process from the bladder wall. This is most frequently the case. One of my patients developed a renal infection from a cystitis due to a retention catheter. Third—Motility of organisms. Fourth—Back flow of urine, which may be caused either by increased bladder pressure or reversed peristalsis. The experiments on this subject are somewhat contradictory, but urine probably flows back through the ureter only when there is disease of the ureteral orifice. Experiments, clinical observations, and autopsy findings warrant this assertion. My work leads me to believe that indiscriminate hydraulic distention of the bladder for cystitis is a dangerous procedure, and that ureteral catheterization through an infected bladder should not be done. The most rational treatment for cystitis is the formation of an artificial vesico-vaginal fistula, which rests the bladder and cures the ureteral stricture.

A retention catheter is a dangerous instrument, because it may act as a foreign body. A study of the anatomy and pathology of the ureter shows that this tube not only carries urine from the kidneys to the bladder, but is also of value in preventing a flow in the other direction.

Dr. Russell: Dr. Sampson's work has many practical sides. Cystitis is the *bête noir* of gynecology, and this paper has told us a great deal about its etiology.

Dr. Young: In my article published in the *Johns Hopkins Hospital Bulletin* in 1898 I reported some experiments as to the presence of the ureteral reflux in the cadaver and in dogs. Many severe cases of cystitis were at this time treated on the surgical side of the hospital by the method of distention after the safety of this procedure had been demonstrated experimentally on dogs. The results were uniformly good—in one case remarkable. In the past six years I have treated many contracted bladders by hydraulic distention without a sign of ureteral reflux and no symptoms of renal infection.

In the Musée Guyon last summer I found one case of ureteritis in which the orifice of the diseased ureter was wide open, and in this case the fluid would unquestionably flow up the ureter just as Dr. Sampson has demonstrated in two of his patients. In such cases, however, the kidney and ureter are already diseased, and, in my opinion, the upward flow of any antiseptic fluid would cause no additional injury, but might be of benefit, being analo-

gous to Dr. Kelly's method of irrigating the pelvis through the renal catheter. I am glad that Dr. Sampson has come to the same conclusion I reached and has also taken his stand against the work of several European investigators who have attempted to show that a ureteral reflux may be present in normal cases. If we give up hydraulic distention because of rare ureteral disease, we leave a miserable class of patients unhelped.

Dr. Hunner: I have seen a case of what was apparently renal infection following closure of vesico-vaginal fistula. Possibly in this patient the bladder became distended during sleep and a reflux of urine took place. Another patient of mine with a stricture of the ureter has frequent attacks of renal infection which always occur at night—possibly for the same reason.

Dr. Sampson: In the autopsy-room in ordinary cases it is, as Dr. Young says, impossible to force urine from the bladder through the ureteral opening, but by hardening the orifice with formalin, thus simulating reteral disease, I have been able to cause a reflux.

Book Reviews.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. For Practitioners and Students. A Complete Dictionary of the Terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, and the kindred branches, including much collateral information of an encyclopedic character, together with new and elaborate tables of Arteries, Muscles, Nerves, Veins, etc.; of Bacilli, Bacteria, Micrococci, Streptococci; Eponymic Tables of Diseases, Operations, Signs and Symptoms, Stains, Tests, Methods of Treatment, etc. By W. A. Newman Dorland, A.M., M.D., editor of the "American Pocket Medical Dictionary." Third edition, thoroughly revised. Handsome large octavo, nearly 800 pages, bound in full flexible leather. Price $4.50 net; with thumb index $5 net. Philadelphia, New York and London: W. B. Saunders & Co. 1903.

This book has been designed by the author to fill a place midway between the complete but unwieldy lexicon and the convenient but incomplete pocket dictionary. That such a work occupies an important place has been clearly shown by this volume.

Perfect accuracy of definition has been sacrificed in some places to brevity, but the definitions are on the whole clear, concise, and complete. The pronunciation and etymology are given for every word. The paper, binding, and printing are in pleasing contrast to many of the modern medical works. The soft leather binding allows of the book's remaining open at any page consulted, and this, with the convenient arrangement of the book, is of no little importance to the student or medical man to whom time is important.

The tables are particularly good, and deserve all the publishers claim for them. Those describing the arteries, muscles, nerves, and veins are accompanied by excellent plates, in colors, clearly illustrating the text. The tables of bacilli are illustrated by plates, showing all the common varieties, while under the heading "Stains" are given working formulae for all the stains in ordinary use.

The natural tendency of a physician consulting a work of such a modern vintage is to look up the definitions of the numerous terms to which the pathologist has introduced us in the study of cellular immunity, which bear yet to our greater number a strange and unfamiliar mien. Under Erlich's lateral-chain theory are given the "receptors," "haptophores," "uniceptors" and "amboceptors," and an excellent description of Erlich's theory. The names introduced from the French and German, such as "thermostabile," "thermolabile," "sensibilisatrice, "immunkorper," etc., have apparently not yet obtained a place in English and American dictionaries. Some rather important synonyms have been omitted, and some of the references are imperfect, but the book is on the whole a most valuable one for those for whom it is intended, viz., students, dentists, and practitioners of medicine. We might add to the author's list another important class—the trained nurse.

Text-Book of Operative Surgery. By Warren Stone Bickham, M.D. Philadelphia and London: W. B. Saunders & Co. 1903.

There cannot be the slightest doubt but that one of the most significant changes in medical literature of recent years has been the new part taken by illustration and the general development of what can really be called "artistic" medical drawing. Not a great deal can be said by way of commendation when a comparison of the newer text-books is made with the best old ones. The addition of new material brought to knowledge by investigation, of course makes the useful life of a medical text-book relatively short, but in the more settled departments of medical work—in which but little that is really new has recently been brought to light—it is not at all certain that, so far as the text is concerned, the newer have much advantage over the old. Really good medical drawing, however, is a more recent development, and we find in these days even the journal articles illustrated with a care and good workmanship seen in former days only in the most elaborate monographs. Authors nowadays fail to be satisfied with reproducing the hackneyed woodcuts which did valiant service for so many years, and they refuse to inflict a text-book on the public without the assistance of an artist capable of making pictures that please the eye and assist the mind, as well as take up space. The volume before us illustrates very well the growing tendency toward elaborate and careful medical drawing. Indeed, though the text is good, the illustrative work is so satisfactory as to make it possibly the most prominent feature. There is a wealth of drawings—559 of them, all original—and the subjects treated have been chosen with discrimination. The pictures are usefully arranged and well drawn. They are, as a rule, not so elaborate as to be hard to interpret nor so diagrammatic as to be displeasing. It is not to be inferred that the text of Dr. Bickham's book is without its useful and interesting features. On the whole, the work compares favorably with other operative surgeries—with Jacobson, or with Bryant, for example. It is, as a rule, up to date, and describes the newer operative procedures. It is exceedingly well arranged and makes an organic whole rather than a mere string of surgical information. Surgical anatomy receives careful and full attention, and the thorough review of the structural features of abdomen and pelvis which precedes the chapter devoted to the surgery of these regions is one of the best things in the book. We note several omissions in detail.

Silver wire is not mentioned in a list of material for skin suture, though many hold that it not only has a place in that list, but possibly heads it. Finney's pyloroplastic operation is not even mentioned. Nothing is said about Sait's method of spinal cocainization, though the results obtained have certainly been good enough to warrant mention of this procedure, even if we do not go to the extreme of considering it ideal. In the description of appendectomy not a word is said about packing off the appendix and protecting the peritoneal cavity—a procedure, not in this case only, but in all abdominal work, too little thought and written about.

In spite, however, of defects, "students and practitioners," for whom the work is said to be intended, will find Dr. Bickham's book an exceedingly useful volume.

International Clinics: A Quarterly of Illustrated Clinical Lectures and Especially-Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and Other Topics of Interest to Students and Practitioners by Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, with regular correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels, and Carlsbad. Volume III, thirteenth series, 1903. Philadelphia: J. B. Lippincott Company. 1903.

One hundred and twenty pages of this volume are devoted to diseases of the gall-bladder and gall-ducts. There are six articles, the first and longest being by John H. Musser of Philadelphia on the "Medical Aspects of the Diseases of the Gall-Bladder and Gall-Ducts." A chapter on symptoms and diagnosis of gallstones is contributed by R. D. Rudolph of Toronto. F. Parkes Weber of London contributes an article on "Biliary Cirrhosis of the Liver With and Without Cholelithiasis." The surgical aspects of the subjects are considered in two articles by F. Lejars of Paris and John B. Dearer of Philadelphia.

The book contains, besides this symposium, fifteen articles on important topics in therapeutics, medicine, and surgery, among which one may mention as of special interest that of A. Chantenesse of Paris on "The Serum Treatment of Typhoid Fever," and that of Charles F. Craig of the United States Army on the "Parasitology, Symptomatology, Diagnosis, and Treatment of Malarial Infection."

The Physician Himself, and Things Which Concern His Reputation and Success. By D. W. Cathell, M.D. The twentieth-century edition, being the eleventh edition revised and enlarged by the author and his son, Wm. T. Cathell, M.D. Philadelphia: F. A. Davis Company. 1902.

As this book on its first appearance, about twenty years ago, was at once taken into great favor, so in succeeding editions it has held its place as the best book on the subject. It is doubtful, however, if the most recent edition is better than the first. The first edition was full of wise counsel of the most practical sort; it was written with convincing directness and simplicity, and there was not a sour line in it.

One regrets the touch of acerbity which has been laid upon the original matter. All those who know the author realize that he has ripened without a trace of bitterness. This small observation upon the new edition is, perhaps, but the carping of an old friend, and is certainly not meant to detract from the undoubted value of the book. Its original merit though slightly disguised, is undiminished. It consists in hand-to-hand dealing with every phase of the physician's peculiar relations with his fellow-man. The general observations on character, equipment, and conduct are thoroughly sound and practical, but its unique quality is that the book is a safe guide in the particular difficulties which must arise in medical relations with all sorts and conditions of men. Prejudice, superstition, creed, politics, social status, occupation, race—in short, everything which may complicate medical relations is considered in this book, considered in the light of rich experience, and considered in a spirit so broad and tolerant that one should obtain from the book something better than rules—a share of the author's own tact.

The Refraction and Motility of the Eye. By William Norwood Suter, M.D., Assistant Surgeon, Episcopal Eye, Ear, and Throat Hospital, Washington, D. C. Illustrated with 101 engravings in the text and 4 plates in colors and monochrome. Philadelphia and New York: Lea Bros. & Co.

The author states in his preface that it has been his "endeavor to furnish a text-book on the allied subjects of the refraction and motility of the eye in a manner simple enough for use by beginners in ophthalmology, and at the same time with sufficient completeness to meet the requirements of more advanced students and of practitioners."

The first of these objects is surely well attained, and the student will find collected here good descriptions of the various methods employed for the diagnosis and treatment of muscular and refractive errors, together with much good advice bearing upon the details of such work. The first portion of the book is devoted to an explanation of optical principles, and, while mathematical formulae are freely used in the way of demonstration, they are made as simple as possible. Throughout there is a clearness and conciseness of statement that pleases the reader, and the illustrations are helpful and well chosen. The book will prove a valuable ready-reference for students.

H. O. R.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Volume III, September, 1903. Diseases of the Thorax and Its Viscera, Including the Heart, Lungs, and Blood Vessels.—Dermatology and Syphilis.—Diseases of the Nervous System.—Obstetrics. Philadelphia and New York: Lea Bros. & Co. 1903.

The four contributors to this volume are William Ewart, M.D., F.R.C.P., of London; Wm. S. Gottheil, M.D., of New York; Wm. G. Spiller, M.D., of Philadelphia, and Richard C. Norris, M.D., of Philadelphia. The advances of a year in each of the four departments of medicine considered are fully and clearly presented.

MARYLAND MEDICAL JOURNAL.

JOHN S. FULTON, M.D., *Editor.*

Associate Editors:

THOMAS R. BROWN, M.D. | HUGH H YOUNG, M.D.
ROBERT REULING, M.D. | JOSE L. HIRSH, M.D.

BALTIMORE, DECEMBER, 1903

THE MEDICAL PROFESSION AND THE COMING LEGISLATURE.

THE medical profession of the State of Maryland will, as usual, have something to present for the consideration of the general assembly at the coming session, and, as usual, the profession is not in a state of readiness to meet the opposition which is sure to arise in the legislature itself. The membership of the new assembly is determined, and, so far as that membership is known, it is in no respect more favorable toward the claims of the medical profession than its predecessors.

All medical legislation proposed at Annapolis must first pass the scrutiny of a standing committee before coming under the consideration of either house. The *personnel* of these two committees, one in the house and the other in the senate, can already be approximately forecast. Each of the committees will include men who have heretofore consistently hindered and opposed medical legislation, and if the selection of the new members of those committees goes by chance, as is usually the case, it is a practical certainty that each of the committees will consist of a majority knowing little of the subject and a minority definitely hostile to whatever is proposed by the profession. The majority being indifferent and the minority actively unfriendly, it is not difficult to foresee the fate of a practice act. The outlook at present is discouraging, and now is the time to recognize the adverse probabilities, for by careful action they may be amended.

It is well to recall at this time the means which have been heretofore employed to defeat the will of the profession. Not once in the history of our failures has a medical-practice act been beaten by yeas and nays. Once a bill is brought to that point the chances are in its favor. The bill of 1892 was defeated by executive veto. This was easily brought about by a single medical man who had the governor's ear, and the loss of the bill might have been prevented as easily as it was accomplished. The opposition would probably

have been silenced, and certainly would have been futile, if the governor had simply been asked to give notice when the bill would come up for final action.

We have been defeated by the introduction of other bills purporting to cover the same ground. This maneuver delays the work of the committees, and if rival bills are reported, divides the interest of the house. In 1898 two bills, identical in their provisions, were introduced simultaneously, one in the house and the other in the senate. This clever procedure threw the profession into consternation, for by double introduction the one measure can be considered simultaneously in both branches, and, passing in their respective branches, can become one law by the mere formality of concurrence upon either side. Accordingly, the Faculty bill, after long delay, started upon a career of compromise, and was practically abandoned. The other bills died also. They had served the purpose of their originators. Their enactment was not expected or desired by their originators.

In 1902 we allowed the practice act to be emasculated by amendment after amendment. It was perhaps unavoidable, but if so the profession must have been weaker in 1902 than at any of the previous five sessions. There are probably many other devices for defeating legislation, but we should not be defeated twice by the same devices. When we were beaten by executive veto that defeat was a sheer waste of the fruits of victory. When we were beaten by the trick of a rival bill it meant that we were strong enough to be met by strategy. When we lost our bill by mere amendments it meant that we played the game so poorly that tactical skill would have been wasted on us. In the last instance we did not go to a draw—we lost ground. Heedless of experience, we risked ground previously won, and the hostiles occupied and held it.

We must fight this winter not only for substantial advance, but also for the recovery of lost advantages. We must go by a safe route after the needed amendments. Surely our experience shows that to seek them by a wholesale repeal and re-enactment is to follow a very dangerous route. At the last session we began, as usual, "Be it enacted by the General Assembly of Maryland, that Sections —— of Article —— of the Code, etc., be and the same are hereby repealed and re-enacted so as to read as follows." We obtained our repeal without gainsay or resistance, but the re-enactment which was given us was not what we asked or desired.

The present law, we are told by the secretary of the Examining Board, "is so discreditable a factor in the work of advancing professional qualifications that some States, notably New York, have declined to enter into reciprocal relations." Even so. At this time we may not rightfully claim professional equality with other States. Our status is so far below respectability that we

cannot cover the interval in a step. If we try a leap and fail to land firmly on two feet, the next report of the Board of Examiners may advise us that those States hitherto recognizing our license have terminated reciprocal relations. It will be much wiser to content ourselves for the present with what we can get with little risk.

The causes of repeated defeat at Annapolis are but half accounted for by popular indifference or hostility to medical legislation. These, indeed, are the proximate causes, one widespread and the other energetic, but their combined strength could not withstand an aggressive prosecution of the claims of the profession. A supplicant cause is half lost. We want justice; we ask for generosity, and receive disdain.

The matter and form of our suits are always determined by a relatively small number of men, and their presentation is always made by a smaller group of men who, however earnest their advocacy, have always the least material interest in the issue. Liberty to raise the standards of professional character and qualification is not the proper quest of the leaders, but of the rank and file. The skill of a few medical men can avail but little to the sick and injured among 1,000,000 people, but the average efficiency of 3000 physicians is a matter of supreme concern to the State of Maryland. Why should a few men go to Annapolis and ask leave for their feebler brothers to put on strength? We can do that without legislation, and afterwards demand the affirmation of our right to full fellowship in the medical profession of the United States.

Can it be that the rank and file of us are content to be regarded as beneath those very easy standards of skill and acquirement which other States have imposed upon the profession? Suppose that the people of this State should discover that the requirements for admission to practice medicine in Maryland are inferior to those enforced in other States. What other inference could reasonably be drawn than that the physicians of Maryland are, in fact, inferior to those of other States? Is it likely that an intelligent citizen, once informed on this point, will increase his respect for his own medical adviser who bears with little or no protest the imputation of inferiority? A feeble agitation of this vital matter by a chosen few will serve only to inform the intelligent public of our discreditable and discredited status. When the farce has run long enough the public may undertake on its own account and in its own way to do for us what we cannot do for ourselves. In the struggle for professional liberty the men in the ranks must lead or be driven.

Medical Items.

Dr. R. D. Murray of the United States Public Health and Marine Hospital Service, on yellow-fever duty at Laredo, Texas, was fatally injured in a runaway on November 15. He suffered fractures of the clavicle, scapula, and leg. Dr. John Guiteras, who was in the same vehicle, escaped serious injury.

The Frederick County Medical Society has elected the following officers for the coming year: Dr. C. W. Goldsborough of Walkersville, president; Drs. D. M. Devilbiss of Woodville and E. L. Beckley of Middletown, vice-presidents; Dr. Ira J. McCurdy of Frederick, secretary; Dr. Wm. C. Johnson of Frederick, treasurer; Dr. H. F. Getzendanner of Liberty, librarian.

The Emergency Hospital of Frederick County has been newly opened under the auspices of the County Medical Society. The officers of the hospital are: Dr. Wm. H. Wagner of Woodville, chairman board of trustees; Dr. J. W. Downey of New Market and Dr. D. E. Stow of Mt. Pleasant, vice-chairmen; Dr. H. P. Fahrney of Frederick, secretary, and Dr. Wm. C. Johnson of Frederick, treasurer.

The plan of Dr. Edward Martin, commissioner of health of Philadelphia, for the medical inspection of schools has had a trial. A physician and a nurse visiting the Mt. Vernon School found an average of more than twenty pupils daily unfit for school. Their disabilities were chiefly due to affections of the eye, throat, and skin. The children were sent home, the nurse following, and advising the parents as to the needs of the children.

Smallpox is increasing in Delaware, and is present on the Eastern Shore of Virginia. The prospects for repeated invasions of the Maryland counties on the Eastern Shore are very good. The State Board of Health of Pennsylvania has declared a quarantine of the city of Allegheny. It does not yet appear that this measure has lessened the danger to Maryland of invasion from Pennsylvania. Smallpox is again on active duty in West Virginia.

Mr. Nice has introduced in the city council of Baltimore an ordinance forbidding any person to spit on the sidewalk of any street, avenue or public square in the city, or upon the floor or platform of any street car or other vehicle carrying passengers for hire, or upon the floor of any depot or station, or of any theater, store, factory, hotel or lodging-house. A fine is provided for violation of the ordinance, and persons and corporations having control of buildings or conveyances are required to post notices of the ordinance.

The State Board of Health has brought charges before the county commissioners of Baltimore county against Dr. John C. Schofield, sanitary officer of the twelfth district, of incompetence and neglect in the management of the smallpox outbreak at Homburgville last spring and of irregularities in the registration of deaths in his district. The charges were heard on November 23 and 24 at Towson. Dr. Schofield was represented by Messrs. Lawrence and Duncan, attorneys. The State Board of Health was without counsel.

The "Craig Colony Prize" of $200 is offered for the best essay on the etiology, pathology, and treatment of epilepsy. The following conditions must be complied with: The paper must show original work; its subject-matter must not have been previously published; the manuscript must be in English, and must be in the hands of Dr. Frederick Peterson, 4 West 50th street, New York, before September 30, 1904. The manuscript must be accompanied by a sealed envelope enclosing the name and address of the writer, and bearing on its outside a device or motto corresponding to the device or motto on the manuscript.

Dr. Wm. S. Thayer, chairman of the Tuberculosis Commission, caused the arrest on November 23 of Wm. Brown for spitting on the floor of a street car. Mr. Justice Fechtig imposed a fine of $1. Dr. Thayer was a passenger on the car and witnessed the act of expectoration. He called upon the conductor to have the violator arrested, but the conductor declined to do so. A policeman was then called upon, but declined to make an arrest. Another policeman was called, who concluded that the arrest should be made. The conductor then objected to the removal of the offender from the car, and only acquiesced after having recorded the name and the number of the officer. Apparently the officers, the conductor, and the offender were all unaware that any law had been violated.

The Warren Triennial Prize (founded by the late Dr. J. Mason Warren in honor of his father) will be awarded in 1904 for the best dissertation on some subject in physiology, surgery, or pathological anatomy. The arbitrators are physicians and surgeons of the Massachusetts General Hospital. Competing essays must be legibly written and suitably bound, so as to be easily handled. The name of the writer must be enclosed in a sealed envelope, on which must be written a motto corresponding with the one on the accompanying essay. Any clew given by a dissertation or by a writer which reveals his name before the award of the prize has been made will disqualify him. If no essay is considered worthy, no award will be made. April 14, 1904, is the last day on which manuscripts may be received by Dr. Herbert B. Howard, resident physician Massachusetts Hospital, Boston. The value of the prize is $500.

Dr. Wm. M. Bayliss, professor of physiology in University College, London, was awarded a verdict of $2000 in his recent suit for slander against Hon. Stephen Coleridge, secretary of the Antivivisection Society. At a public meeting in St. James' Hall last May Mr. Coleridge read a statement, based on the evidence of two Swedish ladies, Miss Lind and Miss Shartan, charging Dr. Bayliss with gross cruelty and violation of the law in making an experiment upon a dog without anesthesia. Miss Lind and Miss Shartan testified to having attended one of Dr. Bayliss' lectures in February, when they were able to assure themselves that a brown terrier was experimented upon while completely conscious. The two ladies continued to attend Dr. Bayliss' lectures, and wrote a book in the well-known style of antiscientific mendacity entitled "The Shambles of Science." When the verdict was announced there was cheering in the courtroom and in the street. There is said to have been acclamation also in Paris.

Dr. Julian J. Chisolm, emeritus professor of diseases of the eye and ear in the University of Maryland, died at Petersburg, Va., on November 2, 1903, aged seventy-three years. Dr. Chisolm was graduated in medicine at the Medical College of South Carolina in 1850, and afterwards studied abroad. He began practice at Charleston, in his native State, and rapidly gained prominence as a surgeon. During the Civil War he was among the distinguished surgeons of the Confederate army, and was the author of the official text-book entitled "A Manual of Military Surgery." In 1869 he removed to Baltimore and became professor of operative surgery and diseases of the eye and ear in the University of Maryland. His reputation as an ophthalmologist rapidly extended, so that in 1873 he abandoned other surgical work and thenceforward devoted himself exclusively to his specialty. He had extraordinary gifts as a teacher and no less striking skill as an operator. He contributed abundantly to the literature of his specialty and exerted a strong influence upon its development. In 1877 he founded the Presbyterian Eye, Ear, and Throat Hospital, which is today the chief monument to his energy and public spirit. In 1894 Dr. Chisolm had an apoplectic seizure which terminated his active career. So passes another of that remarkable group of men who came to Baltimore after the Civil War and contributed very much to the later history of the city.

Views of "A well know homopath" on the Enforcement of the Anti-Spitting Ordinance.

The president of the Tuberculosis Commission has sent us the following communication which was received by him on November 24, written upon one of the City Health Department infectious-disease return cards:

"Sir—Being a practicing physician myself and seeing in the Baltimore Sun, "That you caused the arrest of Mr. Brown, for only once spitting in the street car. This is an outrage and if you would had done the same to me I would have wipped out the gutter with you. You and your whole Tuberculosis Commission are humbbugs, there is nothing in it and I hope that we see the time coming that you get put back for this insult. It seems to me as if the people of Maryland should take enything granted to be so, what eny Commission's of such kind of quacks issues. If the would take you fellows and drown you in the Chesepeack Bay which would be the geatest blessing to the community. Hope you get over this spell and reform.

(Signed) "A well know homopath."

The author of this unique production ought to be well known, but we dare say he is not a "homopath."

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